Making it personal:

web users and algorithmic personalisation

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I hereby declare that this thesis has not been and will not be, submitted in whole or part to another University for the award of any other degree.

Signature: ……..

Summary

This thesis investigates how web users negotiate and engage with contemporary algorithmic personalisation practices; that is, practices which seek to infer (via data tracking mechanisms and other algorithmic means) a user's habits, preferences or identity categorisations in order to 'make personal' some component of that user's web experience.

Drawing on thirty-six semi-structured interviews, I employ a qualitative methodology that seeks to bridge the gap between critical theorisations of algorithmic personalisation and the negotiations of web users themselves who encounter algorithmic personalisation in everyday life. To do this I focus on three sites of investigation. I first examine privacy tool Ghostery and the ways in which Ghostery users' negotiate their positions as data-tracked subjects, especially in relation to privacy, knowledge and their sense of self. I then investigate Facebook's autoposting apps as examples of algorithmic personalisation that act on the user's behalf, and draw on the accounts of Facebook app users to explore themes such as identity performance, autonomous control and algorithmic governance. Finally I examine users' engagement with the 'predictive powers' (Google Now, 2014) of the personalisation app Google Now, specifically in regards to notions of user trust, expectation and speculation.

My critical enquiries produced a number of themes that tie this thesis together. Central were: the epistemic uncertainties that emerged as trust and anxiety in participant responses; the implications for a performative understanding of selfhood when algorithmic personalisation intervenes in user self-articulation; the (asymmetrical) data-for-services exchange which web users must negotiate with commercial data trackers; and the struggle for autonomy between user and system that algorithmic personalisation creates. The thesis also argues that algorithmic personalisation demands that web users' identities be constituted as both a stable and fixable 'single identity', but also as recursively reworkable, dividualised and endlessly expressable entities.

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Chapter One

Introduction: Making it personal

'*By using this site you agree to the use of cookies for analytics, personalized content and ads'*
(Microsoft, 2015).

'*Our goal is to build the perfect personalized newspaper for every person in the world… we are trying to personalize [News Feed] and show the stuff that's going to be most interesting to you'*
(Mark Zuckerberg cited in *Business Insider*, 2014).

'*Previously we only offered Personalized Search for signed-in users, and only when they had Web History enabled on their Google Accounts. What we're doing today is expanded Personalized Search so that we can provide it to signed-out users as well'*
(Google Blog, 2009).

Hints that components of a user's web experience might now be 'personalised' exist in innumerable manifestations all over the web – the above quotes from Microsoft, Facebook and Google all allude to the fact that these organisations are (at least discursively) embracing what Fan and Poole call the 'intuitive but also slippery' concept of personalisation (2006: 183). Microsoft mobilises the term to legitimise the use of cookies[1] across their platforms (MSN, 2015; Microsoft, 2015, Live; 2015); Facebook CEO's Mark Zuckerberg hopes that Facebook's News Feed will automatically deliver news content that is individually 'relevant' to the inferred interests of the site's one billion users; and Google use the term to describe their tailored search results system, which uses at least fifty-seven different signals to identify a web user in order to personalise results based on their Google profiles and pre-existing search preferences (Pariser; 2011). Invoking the sentiment that 'Personalized Search'[2] can only be convenient for

[1] The cookie (also known as the http cookie) is defined by Peacock as a small piece of code that facilitates 'a way of storing information on the user's computer about a transaction between a user and a server that can be retrieved at a later date by the server' (2014: 5). As I will explore, cookies are widely used by platforms not only to facilitate platform functionality but also to collect data about users for monetisation purposes.

[2] In keeping with Harvard referencing guidelines, US spellings in citations have been kept to their original spelling, however the thesis itself adheres to UK spelling.

its users, the Google Blog states that they now provide the service even to those who are 'signed out' of Google. What is made less clear is that the mechanisms used to algorithmically personalise users' search results are also used to target these very same users for advertising purposes; for example in their advertiser-facing marketing materials, YouTube (who are owned by Google) states that advertisers can '[z]ero in on the right people based on who they are, where they're located and what they're interested in – for example, men aged 18-34 in Birmingham or women who enjoy travelling' (YouTube, 2015).

The quotes above share three similarities that I wish to highlight: firstly, they treat personalisation as 'intuitive' – it does not need to be explained or justified, but is instead presented as a practice that simply exists, apparently for the unarguable advantage to the user. Secondly they exemplify that personalisation is indeed 'slippery' – it can be mobilised in various contexts, and can be used in ways that do not necessarily need to reveal the specificities of *what* is being personalised (simply 'content', 'stuff' or 'results'[3]), nor *how* or *when*. Thirdly, they highlight that in the context of the contemporary web, personalisation is not something that is enacted by the user – but instead via commercial and market-facilitating systems enacted by the platform or service. You do not personalise your web experience; rather, with the help of your 'personal data' harvested as you click through the site(s), your experience is 'conveniently' personalised for you.

It is the persistent, 'slippery', but certainly not intuitive presence of personalisation in my own web experience that provides the foundational motivations for this thesis. When I first embarked on this research in 2012, evidence that some components of my web experience were being 'personalised' took the form of web advertisements for 'recommended' products I had recently browsed on retailers' web sites. At the time these ads seemed crude, invasive and

[3] The latter 'results' is admittedly more specific than 'content' or 'stuff'; however the implementation of the term is again here 'slippery' in that Google Search does not reveal to users which search results have been personalised to them and which are universally delivered to all Google Search users.

most of the time entirely ineffective – sometimes I would be served advertisements for products that I had literally just bought, rending the point of 'targeting' me based on my previous browsing habits so precise as to be absurdly pointless. At other times, the knowledge (produced by the ad's very existence) that the advertisement could only be generated by algorithmically 'watching' me triggered a feeling of privacy invasion that worked to overshadow any 'relevance' the ad might have had to my own personal preferences, tastes or habits. The enduring presence of these 'tailored' advertisements, delivered across platforms and in a variety of different formats, served as a reminder that the personalising of my daily web trajectory inherently involved relinquishing some form of personal data in exchange for the free content, platforms and services I accessed on a daily basis.

Such attempts to deliver users personally relevant advertisements still persist, yet are now accompanied by other personalisation practices that seemingly transcend (but, as I will argue, never fully depart from) targeted marketing – it is no longer only clearly bounded 'recommended ads' that are marked as personalised but also content, services, interfaces or sometimes simply 'experiences'[4]. The term 'personalisation' is frequently used to legitimise the tracking of users by commercial platform providers on some of the world's most visited sites;[5] for example, AOL's *privacy* policy states that their second 'principle of privacy' is that 'we may personalize experience based on how you use the AOL network' (AOL, 2015). Entertainment website Buzzfeed states that '[t]he information we gather enables us to personalize, improve and continue to operate the services' in order to explain the tracking of users' data as and when they visit the site (Buzzfeed, 2015). Online music player Spotify's privacy policy states that the primary reason for collecting data is to 'provide, personalise, and improve your experience with the Service' (Spotify, 2015). The term is used to explain the presence of cookies in user-facing

[4] For example, in their privacy policies Yahoo (2015a), Microsoft (2015), travel site Trip Advisor (2015) and game producers Electronic Arts (2015) use the terms 'personalized experience' or 'personalize your experience' as one of their reasons why they track web users.

[5] All references here feature on the Alexa 500 list of the world's most visited sites (2015).

cookie notices (such as the Microsoft notices cited above, but also on sites such a eBay, BBC and Twitter) – some of which promptly disappear within a few seconds of visiting the site, their ephemerality making such notices hard to capture and harder to scrutinise. On the contemporary web, personalisation seems to be both elusive and just 'there' – in their Privacy Policies, nine out of the ten most popular UK web sites cite the 'personalisation', 'customising' or 'individual tailoring'[6] of users' experience as one of the primary reasons for harvesting users' personal data.[7]

The concept that our web experience can and should be personalised is similarly reflected in discourses surrounding the 'intelligent personal assistants' (Myers et al., 2007) offered by platforms such as Google, Microsoft and Apple. Google Now, Apple's Siri, and Window's Cortana (launched in 2014, 2011 and 2014 respectively) claim to be able to personalise the information and services that users 'need' (Google Now, 2014) by acting autonomously on the user's behalf, in order to offer the most 'personally relevant' information in the face of 'Information Overload' (Lovink, 2011). The 'personal' touch of these digital assistants is enacted by algorithmic mechanisms, and is framed as a form of computational engagement that can pre-empt what information we require, what texts we'd like to watch, listen to, consume, and what products most suit our preferences. When I first encountered these assistants, it seemed to me that the inner computational mechanisms of these softwares, as well as the ways in which they generate value for the platform provider, remained as slippery as what these assistants were claiming to provide to users: a free, convenient and efficient service that could somehow 'know' me, pre-empt my daily needs, and cater to my everyday habits.

[6] Though these terms are different, in many instances they are used to mean the same thing – that is, to 'know' a users' individual tastes, preferences, identity components, habits or desires in order to deliver some content, interface or service that is deemed to be individually suited, filtered or tailored to correspond to that user.
[7] Based on the Alexa 500 list for most visited UK sites. The sites are Google.co.uk, Google.com, Facebook.com, YouTube.com, Amazon.co.uk, eBay.co.uk, BBC.co.uk, Yahoo.com, Live.com, and Wikipedia.org (Alexa, 2015). The only site that does not include the above terms in its privacy policy is Wikipedia, which is famously not-for-profit.

It is not only the widespread mobilisation of this slippery concept by commercial platforms that has sparked my investigations, but the impact of personalisation on the person who is implicated in personalisation processes. As the following chapter details, the type of personalisation upon which this thesis is focused is that which is implemented, not by the user themselves, but by computational mechanisms designed to *algorithmically enact personalisation on behalf of the user*. In doing so, this form of personalisation looks to determine some component of their interests, habits and identities through a process of inference (Thurman and Schifferes, 2012); that is, by automatically inferring what a user might 'like' through data tracking and mining strategies (rather than explicitly requesting personal information from the user) in order to tailor content, services, interfaces or information accordingly. The above process of user tracking, identification, management and anticipation has been critically defined by some scholars as a process of subjectivity constitution: this process creates 'algorithmic identities' (Cheney-Lippold, 2011: 164), 'data doubles' (Lyon, 2014: 6), 'database subjects' (Jarrett, 2014: 25) and 'algorithmic selves' (Pasquale, 2015: 1) that, as I shall explore, are designed to intersect and interact with the identities that they are intended to mirror, represent and/ or constitute.

The importance of studying personalisation

The first and third parties that claim to personalise for users some component of their web experience commonly deploy a host of algorithmic dataveillance techniques in order to shadow their users' everyday habits and socio-cultural economic practices.[8] This includes harvesting users' browsing histories, Facebook 'likes', geolocation, app interactions, the photos they upload, the comments they write, their cross-device activity, their commute to work, their friend connections, their purchase history, their song downloads, their movie/ TV viewing

[8] The socio-technical habits practices that are shadowed in order to provide personalised experiences are usually web-based, however technological developments mean that it is increasingly possible for platform providers to shadow users' 'offline habits'. For example, Google Maps can track your location without connecting to the internet (Google, 2015). As Sauter (2013) and Berry (2014) note, the increasing ubiquity of web-connected devices in everyday life means making such the distinction between 'offline' and 'online' is becoming increasingly unhelpful - individuals' daily trajectories are becoming 'more and more implicated with digital tools' (Sauter, 2013: 2).

choices, their gaming high-scores and their recordable affective fluctuations, amongst a host of other now traceable everyday actions.[9] Upon being shadowed, these snippets of everyday trajectory are then collated and connected to other such user data sets in order to construct and manage behavioural profiles, user demographics or other configurations of user identity. The collection of this anonymous,[10] pseudonymous and personal user data is commonly known as data tracking.

As a topic of debate, data tracking has attracted a large degree of public and academic scrutiny. Especially in the wake of the Snowden scandal[11] – which exposed the extent of US and UK state surveillance via data tracking on social media, mobile phones, MSM and email – data tracking has been debated and challenged as a matter of 'privacy'; of defending it on the grounds of human rights (McStay 2012; Lynch, 2014; Balkan, 2014) or relinquishing it in exchange for the free and convenient services that commercial web platforms offer us (Bassett, 2013; Jordan, 2014; Turow et al; 2015; Peacock, 2015; Machanavajjhala et al; 2011). The ubiquity and opacity of data tracking (Falahrastegar et al., 2014; Peacock, 2014; Brunton and Nissenbaum, 2011) combined with the lack of data tracking regulation (Peacock, 2014) means

[9] One of the latest possible means of collecting user data is through access to users' mobile phone camera and microphones – Facebook recently updated its Terms of Service on its Facebook Messenger Mobile app to state that in order to use the app, users must agree to 'allow the app to use the camera / record audio with the microphone *at any time and without your confirmation'* (Facebook Messenger App cited in Watson, 2013 my emphasis). The ambiguous wording means that it is not known if this data collection strategy is yet in practice, but Facebook's terminology certainly allows for the *possibility* of this form of tracking.

[10] Turow argues that though collected user data is claimed to be 'anonymous' or 'anonymised', this data is then connected to unique identification codes that correspond to individual users, thus rendering this claim to anonymity 'meaningless' (2012: 138).

[11] The Snowden Scandal was a series of revelations, disclosed in June 2013 by NSA 'whistleblower' Edward Snowden and reported by *The Guardian* and *The New York Times*, uncovered extensive mass dataveillance programs being deployed by state-surveillance agents both in the US and UK (MacAskill et al., 2013; Mazzetti and Schmidt, 2013; BBC, 2013). Snowden reported that the US state agency the NSA had 'access to a vast quantity of emails, chat logs and other data directly from the servers of nine internet companies' (Black, 2013) and thus was undertaking blanket data collection schemes that targeted hundreds of thousands of citizens. In the UK, the state agency GCHQ was accused of similar mass data tracking and collection. Snowden claimed that these strategies were being deployed with the cooperation of commercial enterprises such as Verizon, Google, Facebook and AOL, who were collecting similar mass data sets for commercial purposes (MacAskill, 2013). The Snowden revelations mark an important historical point in relation to this thesis, in that the Snowden revelations marked a revival of public discourse on online privacy at the time that this thesis was researched and written. As Black write for *The Guardian*, 'these revelations have underlined the sheer power of electronic snooping in the internet era and have injected new urgency into the old debate about how far a government can legitimately go in spying on its own people on the grounds that it is trying to protect them' (Black, 2013).

that the framing of data tracking as a problem of privacy is certainly valuable. However, as I expand on in the next chapter, though this thesis is secondarily concerned with privacy (indeed Chapter Four is built around user negotiations with online privacy tool Ghostery) I am in sympathy with scholars such as Gillespie and Essaid when they state that to engage with debates around privacy is to be having the 'wrong conversation' (Essaid, 2015) – at least if this is the only conversation – in relation to data tracking. As Gillespie recognises, 'much of the scholarship about the data collection and tracking practices of contemporary information providers has focused on the significant privacy concerns they provoke' (2014; 174)– and yet he states that 'privacy is not the only concern' (2014: 174). I agree with Gillespie's sentiment that the socio-cultural implications of data tracking extend far beyond breaching one's privacy, as my empirical investigations hope to highlight. This is because data tracking does not exist, in and of itself, simply to surveil or track users, but to 'anticipate' them (Gillespie, 2014); to 'know' some facet(s) of a user's identity in order to 'make personally relevant' on their behalf some component of experience. Crucially, this process of anticipation is executed not just to 'watch' the user but to *act* on, with, or against them.

Take for example Facebook's data tracking practices: according to 'My Ad Preferences',[12] Facebook had categorised my behaviour on Facebook into a list of over fifty 'interests', which include 'Feminism', 'Media Studies', 'Digital Technologies' and 'University of Sussex'. Many of the listed categories do indeed reflect some of my socio-cultural interests, despite that fact that I have actively resisted explicitly giving this information to Facebook. These 'interests' have instead been inferred from my trajectory on Facebook and on the web more generally. These inferred interests are then used to anticipate the kind of advertising, 'sponsored stories',

[12] The name 'My Ad preferences' suggests that these categories of 'interest' only affect the adverts I see – but in actuality these 'ads' usually take the form of 'suggested posts', which are formatted not as ads but as news and entertainment content. This blurring between advertising and 'organic' content highlights that though personalisation processes often revolve around targeted advertising, its effects extend beyond targeted products or services, especially given that consumption of such 'advertorial' content then goes on to inform later 'algorithmic categorisations', as explored above and throughout this thesis. For more work on the collapse of advertising and editorial boundaries through the branding of online content, see Hardy (2014; 2015) and Jenkins (2006).

'suggested posts' and other content that I might want to see, and my news feed is filtered and adjusted accordingly (Facebook Help Centre, 2015), which through a process of recursion (Jordan, 2015),[13] in turn informs the kind of interests that Facebook might infer from my activity henceforth (the cycle goes on). Such a cycle highlights that the very purpose of data tracking is to act accordingly on me – to make decisions on my behalf, to filter, re-order or display content or information in such a way as to be personally relevant.

Audiences and individuals have been anticipated and targeted for many decades by various media marketing systems (Smith-Shomade, 2004; Scannell, 2006; Kant 2014). However, as I detail in the next chapter, new algorithmic, real-time and correlational techniques mark a departure from previous 'representational models' (Bolin and Andersson-Swartz 2015: 1) of anticipating the individual or the audience. In this thesis I will propose that though commercial online data tracking is often critiqued as a matter of privacy, if data tracking is instead considered as a matter of anticipation in the name of personalisation, then it is possible to consider a host of fresh critical questions arising around identity, knowledge production, user autonomy and the negotiation of selfhood. For example, if data tracking is deployed to identify and anticipate the user, as well as (recursively) *act* on them in order to personalise some component of their experience, then how can we define who 'the user' is, or how they are constituted? If personalisation practices seek to act on this user's behalf, then how can a user's autonomy be defined, approached and theorised? And how can a user seek to epistemologically 'know' the algorithmic processes that apparently 'know' who they are? These kinds of questions have inspired and informed the research questions below, and this thesis takes up these considerations through a qualitative and critical methodology that I will detail shortly.

[13] Jordan describes recursion as a process in which 'information can eat itself [and]… in this way produce more information' (2015: 30); that is recursion affords 'the ability to take on digital information and then use it again and again to change similar digital actions' (2015: 31). Jordan notes that 'recursion may seem like it is based on technical matters of how mathematics is found and how this relations to articulating a basis for creating modern computers. However this theory of recursion has immediate political and cultural ramifications' (2015: 31). Jordan explores some of these ramifications in relation to exploitation of information by data controllers; however I believe the reactive, feedback-able nature of recursion is also useful for considering how identities/ algorithmic identities are co-constituted and co-related.

Furthermore I feel these considerations begin to raise critical implications that demand we go beyond public and academic discourses which consider whether users have 'consented' to the invasive tracking techniques to which they are subjected, or even go beyond how and why privacy is framed as valuable to some users but as dispensable to others. As such, one of the central claims of this thesis to consider fresh critical implications of data tracking – especially in regards to user negotiations of data tracking – not as a matter of privacy, but as a matter of personalisation.

By 'critical' I mean that this thesis is not primarily interested in the instrumental uses, applications and benefits of algorithmic personalisation (for either users who are subject to it or the commercial systems that employ it). I am not really concerned whether personalisation practices are 'successful' in achieving 'personal relevance', or how such systems could be 'improved'. Instead I am interested in the nuances of socio-technical and socio-economic operation and organisation that might work through or underpin personalisation practices, and I am interested in the negotiations that web users – who are always embedded, possibly conditioned, but not always exploited social subjects – might employ, embrace or reject in order to navigate these systems.

In this sense I seek to fit into a longer tradition of critical considerations in Media and Cultural Studies – from the work of Hall ([1989] 2009, [1986] 1996, 1996), Butler (1989, 1990, 1993) and Giddens (1991) which seeks in different ways to interrogate the structural conditions imposed on subjects without denying those subject space for negotiation; or Bourdieu ([1984] 1998, [1979] 1989), who looks to situate individuals within 'fields' that underpin and structure their choices, but which change and mould depending on specific contexts; or scholars such as De Certeau ([1984] 2002) and Silverstone (1994), who point out the power dynamics embedded in negotiations of every day life. These critical traditions of interrogating socio-economic and cultural hierarchies, of questioning social power and of considering the

individual as an agent engrained in wider social structures, have been brought into the realm of the computational by a plethora of scholars who also inform this thesis, as I will expand on shortly.

The difference between algorithmic personalisation and personalised media

Before I expand on these critiques, I would like to highlight that the slipperiness of the term 'personalisation' means that the term is not exclusively applied to *algorithmic* processes of personalisation such as those introduced above. This is where I find my own way in. First then, this thesis is not primarily concerned with a critical interrogation of 'personalisation' in the broad sense of a product, interface or service being 'personal' to an individual, but to the processes of *algorithmic personalisation* that are embedded into the socio-computational-economic architectures of contemporary commercial web-based platforms.

To look harder at this distinction, it is useful to examine studies such as Hjorth's. In her analysis of individual attachment to and engagement with mobile phones, Hjorth (2012) uses the term 'personalization' to describe an individuals' emotional and affective attachment to their personal mobile phone. Similarly, Drotner uses the term 'personalised media' to refer to 'portable, personalised and interactive media' such as 'the Gameboy, the discman, the mobile phone, the PDA and the MP3 player' (2005: 53). In these studies, 'personalisation' refers to a kind of intimate personal use of a technology, a form of interaction between technology and user that describes a highly individualised engagement with a particular piece of technology.[14] The opportunities to research these personal, intimate engagements with media technologies are valuable and widespread, but 'personalisation' in this sense of the term is not the focus of this thesis.

[14] The term 'personalised' is similarly mobilised in early explorations of 'personal' web use on the internet – that is, the internet was seen as personalised medium that afforded individuals the opportunity to create their own individualised, intimate personal spaces. As I discuss in Chapter Two, the 'individualised' space that the web creates is important to this thesis, but it differs from the central focus of this thesis in again, this sense of 'personal' web consumption does not necessarily involve algorithmic intervention.

Instead it is *algorithmic personalisation* that forms the focus of this thesis. As Bodle recognises, this form of personalisation (though he does not explicitly label it as 'algorithmic') relies on an 'algorithmically generated feedback loop', wherein the 'prior actions of a user' (2015: 131) as well as user-to-user interactions are used to inform and structure the personalised content, services, information streams and interfaces that are presented to them by the system. Scholars such as Pariser (2011), Bodle (2015) Stadler and Mayer (2009) and Fuez et al. (2011) discuss the implications and effects of this form of personalisation at length, yet take the term to be self-evident. Furthermore, there are a number of other scholars that critically examine computational systems of user anticipation and prediction – such as Jarrett (2014), Gillespie (2014), Van Couvering (2007) and Mai (2016) – but do not use the term 'personalisation' to describe such systems. Another of the central aims of this thesis is to bring together these theorisations, as well as offer up some definitions of algorithmic personalisation, capturing their theoretical and critical detail, and to explore algorithmic personalisation in relation to its mobilisations and implementations.

As I will explore in the next chapter, at present the critiques and studies relevant to this thesis largely undertake a theoretical engagement to algorithmic personalisation. These theorisations have been invaluable in informing this thesis and also move beyond instrumental studies of whether personalisation 'works' – indeed, they help to identify the critical implications embedded in personalisation practices even when they *do* provide users with 'personal relevance'. However Gillespie notes that at present there is 'gap between theory and documentation' (Gillespie, 2014: 187) in regards to how such theorisations play out in the lived experiences of the users that engage with and negotiate the commercial computational systems that seek to 'know' and 'anticipate' them. One of the central contributions to knowledge that this thesis seeks to make is therefore to bridge this gap in research on algorithmic personalisation. I work to bridge between critical theorisations concerning algorithmic

personalisation and the lived experiences of those who encounter, negotiate and engage with algorithmic personalisation practices on the plain of everyday life. The methodologies employed in this research seek to *connect* and *contextualise* critical interrogations of contemporary algorithmic personalisation with and within the daily lives of the people who encounter it.

Developing my methodology, I was clear that algorithmic personalisation is largely a *market-driven* practice.[15] Thus, though my primary methodologies are qualitative and ethnographic, they are informed and underpinned by a critical political economy approach that acknowledges the role that commercial forces play in user engagements with algorithmic personalisation practices. Taking into account wider socio-economic structures helps to clarify and situate the negotiations of users who are understood broadly as agents engrained in but not determined by broader socio-cultural and economic contexts. I will expand on this claim in the next two chapters, but here with these considerations in mind I would like to propose the following research questions:

RQ1: What 'horizons of possibility' (Gerlitz and Helmond, 2013) does algorithmic personalisation, as a market-driven practice designed to anticipate the user, create for users, who are at once bound up in, and are the subject of, its operations?

RQ2: How do users who encounter algorithmic personalisation practices understand, engage with and negotiate those practices?

[15] By 'practice' here I mean the 'modes of operation' (De Certeau, 1984: xi) that are enacted by platforms in order to 'make personal' some component of a user's web experience. As De Certeau distinguishes the subject who practices from the practice itself, I too want to distinguish the *technologies* that deploy algorithmic personalisation from the 'operational logic' (1984: xv) that structures, informs and drives these technologies. This is because the technologies that achieve algorithmic personalisation are numerous, developing, opaque (to front end users, as I will explore) and specific to platforms, whilst the practice of algorithmically personalising – of inferring a users' needs, intentions, preferences and identity configurations through algorithmic means – is not individually specific to these technologies but is 'concealed within' them (De Certeau 1984: xv).

RQ3: How can the negotiations and engagements created between algorithmic personalisation practices and those who encounter such practices be critically scrutinised?

As well as informing the design of my research, these questions have shaped my decision to take as a central three sites of investigation, each of which enabled me to explore different aspects of algorithmic personalisation. As I expand on below, in the first site I examine privacy tool Ghostery and the ways in which Ghostery users' negotiate their positions as data-tracked subjects, especially in relation to privacy, knowledge and their sense of self. I then investigate Facebook's autoposting apps as examples of algorithmic personalisation that act on the user's behalf, and draw on the accounts of Facebook app users to explore themes such as identity performance, autonomous control and algorithmic governance. Finally I examine users' engagement with the 'predictive powers' (Google Now, 2014) of the personalisation app Google Now, specifically in regards to notions of user trust, expectation and speculation.

This inquiry produced a number of themes that were recurrent in my research and that tie this thesis together. Central were: the epistemic uncertainties of how, when and why users are being anticipated by algorithmic personalisation; the implications for a performative understanding of selfhood when algorithmic personalisation intervenes in, and at times disrupts, user self-articulation; the (asymmetrical and opaque) data-for-services exchange which web users must negotiate with commercial data trackers; and the struggle for autonomy between user and system that algorithmic personalisation creates. These findings are brought together by an investigation of how algorithmic personalisation intervenes in, constitutes and frames users' sense of self – and how users themselves negotiate the demands that algorithmic personalisation makes on them as data-tracked subjects with lived experiences *and* as 'dividuals' (Deleuze, 1992) that underpin the economic operations of the contemporary web.

Introducing the methodological approach

At the heart of this thesis are the qualitative interviews and other engagements that I conducted with users who engage with, negotiate and are entangled with specific personalisation practices. In total this thesis draws on the accounts of thirty-four interview participants; twelve Ghostery users, sixteen Facebook users and six Google Now users. As Chapter Three further details, interviews were designed to be semi-structured and elicit responses which map the different 'horizons of possibility' (Gerlitz and Helmond, 2013) that personalisation might create for users. Gerlitz and Helmond use the term to describe the different possibilities for engagement, negotiation and interaction available to web users who traverse what they call 'the like economy' – that is, a cross-platform, socio-technical 'infrastructure that allows the exchange of data, traffic, affects, connections, and of course money' (2013: 1353). I use the term to consider the kinds of possibilities (and limitations) that the drive to personalise users' web experience might produce for those who are subject to personalisation. As the following chapter seeks to emphasise, this horizon of possibility should be not considered *necessarily* disciplinary or deterministic – depending on the context, the possibilities facilitated by algorithmic personalisation can be analysed in various ways.

Introducing the theoretical framework(s)

There are two primary topics that I consider crucial to this thesis: commercial data tracking (in relation to convenience, control and online privacy), and the constitution of 'algorithmic identities' (in relation to the constitution of selfhood, performativity and governance). In regards to data tracking I draw on the work of scholars such as Turow et al. (2015), Peacock (2014), McStay (2012), Marwick and boyd (2014) and Lynch (2014) to explore data tracking in relation to participants' sense of privacy and control; Turow (2011) and Gerlitz and Helmond (2013) to explore participants assertions such as 'we are all products' (Ghostery participant in interview, 2013) and Bassett et al. (2014), Berry (2012), Savage et al (2013), and Brunton and Nissenbaum (2011) to explore the epistemic asymmetries produced by commercial third party

data tracking. Furthermore, analysis of this research is underpinned by broader theories from Delueze (1992), De Certeau (1984), Gillespie (2014), Agre (1996), Foucault (1988, 1994), Jordan (2013, 2015) and Kitchin and Dodge (2011) to critically unpick how 'data providers' (Van Dijck, 2009) might resist, negotiate or resist the data tracking to which they are subject.

By 'data providers' I mean all web users who are tracked and anticipated by commercial platforms. As Van Dijck herself asserts, though contemporary discourses of user 'prosumption' tend to categorise web users within a spectrum of 'passive consumption' or 'active production', any user's value is always-already underpinned (and indeed superseded) by their value as producers of data – that is, 'only a small percentage of users actually create content whereas the large majority consists of passive viewer; yet *all* categories of users actually qualify as potential data providers' (2009: 47).[16] This thesis thus considers users not as prosumers or passive consumers, but primarily as 'data providers' for the algorithmic personalisation practices that seek to anticipate them.

The other topic of enquiry – 'algorithmic identities' – draws on theories of identity to explore how this process of data tracking and anticipation intersects with users' ideas of themselves, their identity performances, their socio-cultural tastes and habits, their sense of selfhood, and their web use as a part of their everyday life. For this reason as the following chapter details, this thesis is also underpinned by a theoretical body of work concerning identity theory; I will draw on the work of Butler (1991, 1992, 1993), Barad (2007) Cover (2012), Jordan (2013), Bassett (1997, 2004) in relation to performativity; Marwick (2014), Jordan (2015) Marwick and boyd (2011), Sauter (2013), and Liu (2008) in relation to online identity articulation; Giddens

[16] Though all users are 'data providers' for commercial platforms, providers and parties this should not suggest that they are all 'worth' the same thing in terms of monetary value. For example, 'Facebook users in the US and Canada are currently worth $13.54 each to the site, whilst European users are worth $4.50, Asia-Pacific region users are worth $1.59, 'while the "rest of the world", which includes most developing nations are only worth $1.22 per user' (Gibbs, 2016). Such discrepancies highlight the whole point of data tracking is to define and differentiate between users in ways that have both economic and socio-cultural implications.

(1991), Ringrose and Walkerdine (2008), Noys (2015) Rainie and Wellman (2014) to analyse neoliberal ideologies and the cultivation of the autonomous self; and Jarrett (2014), Lyons (20150, Gillespie (2014), Agre, (1994), Bolin and Andersson-Schwartz (2015) and Cheney-Lippold, (2011) to explore algorithmic identity constitution.

Though the next chapter will explore in depth the identity theories that underpin my analysis, what I want to introduce here is that algorithmic personalisation relies on form of selfhood that is in tension. I will argue that algorithmic personalisation demands user identities must be constituted as *both* unitary, inner and fixable *and as* endlessly expressive, recursively reworkable and flexible. By this I mean that the algorithmic personalisation relies on the premise that 'you have one identity' (Zuckerberg cited in Van Dijck, 2013) which can be tracked, profiled, fixed and anticipated but *that can also* be indefinitely worked on, acted on, 'dividuated' (Delueze, 1992) and expressed across platforms and articulated in all contexts. I will argue that Bolin and Andersson Schwarz's (2015) analysis provides a framework for explaining how this tension comes about – they propose that in data tracking individuals are constituted through real-time, mass-popular correlation but *translated back* into representations by commercial data tracking and personalisation practices. The tensions between the types of self that algorithmic personalisation both constitutes and demands emerged in different ways through participant responses with each site of investigation, as I will explore in the following chapters.

Structure of this thesis

The following chapter, *The Drive to Anticipate the Data-Tracked user*, asks 'what is personalisation?' and offers some scholarly definitions that help to clarify what I mean by algorithmic personalisation. The chapter then works outwards from these definitions towards a broader literature review of the relevant theories needed to explore algorithmic personalisation as a matter of anticipating the user. Subsequently I offer an analysis of how user identities have been theorised historically and socio-economically, and how the 'data-tracked user' has come to

by constituted and valued. I then explore how neoliberal discourses of networked individualism intersect with the commercial drive to constitute the data-tracked user. Finally I argue that even as algorithmic personalisation claims to aid the individual in their fight against 'infoglut' (Andrejevic, 2013), the autonomous decision-making capacities of algorithmic personalisation actually create a struggle for autonomy between user and system.

Chapter Three looks to detail *how* the lived experiences of those who encounter and are subject to algorithmic personalisation practices might be taken into account. The chapter details methodological approaches towards participant recruitment and interview design adopted in my research, but also considers my role as a researcher in relation to participants' experiences of everyday life. The chapter looks to take into account the methodological limitations of the project, as well as interrogate the dynamic between myself as researcher and interview participants as socio-culturally situated subjects – or indeed as 'dividuals' (Delueze, 1992).

The subsequent three chapters constitute the main qualitative body of this thesis. These three chapters focus on three specific sites of investigation. Drawing on the accounts of twelve interview participants, Chapter Four – *Personalisation and Privacy in Relation to Data tracking* – focuses on privacy tool Ghostery and the ways in which Ghostery users negotiate their positions as (unwilling) 'data providers' (Van Djick, 2009), especially in relation to algorithmic personalisation. The chapter explores a number of themes that emerged from interview data that was semi-structured using Ghostery's own marketing tagline of 'Knowledge + Control = Privacy' (Ghostery, 2014). These themes include the data-for-services exchange undertaken by participants, as well as the epistemic anxiety articulated through participant statements such as 'Ghostery gives me a false sense of security'. The chapter argues that this epistemic uncertainty actually increased in accounts of participants who could be considered 'power users' (Sundar and Marathe, 2010). The chapter also analyses how 'personalisation' fits into Ghostery's rhetorical sum; that is, I explore the disconnect between participants' negotiations with data

tracking - which they wholeheartedly resisted – compared with their negotiations with personalisation practices – which some welcomed, despite the fact that data tracking exists in order to 'anticipate the user'. Finally, the chapter explores participants' sense of privacy in relation to critical notions of selfhood, and argues that participants framed their use of Ghostery as protecting a holistic, inner selfhood which must be sheltered from the dehumanising threat of data tracking.

Chapter Five – '*Spotify has added an event to your past'* – refocuses its concerns away from personalisation in relation to user engagements with privacy tools and instead looks to explore the performative implications that emerge for subjects from algorithmic personalisation practices. To do so the chapter draws on interviews with sixteen Facebook users and explores their engagements with third party apps that have the ability to 'autopost'; that is, automatically post status updates on the users behalf. I will argue that the ability of third party apps to act in the user's stead raise a host of critical questions in regards to user self-expression, autonomy and identity performance. The chapter argues that moments of autoposting work to intervene in and on occasions disrupt participants' staged self-performance to their 'invisible audience' (Sauter, 2013) on Facebook, and considers that if such instances of algorithmically personalised autoposting can be considered performative, then apps hold the constitutional capacity to actively rewrite, regulate and even constitute the self to suit the operations of personalisation in way that transcend the boundaries of Facebook.

Chapter Six – '*In Google We Trust'* – explores the 'predictive powers' (Google Now, 2014) of Google Now, a personalisation app that claims to 'give users the information they need throughout their day before they even ask' (Google Now, 2014). This chapter marks a slight deviation from the two previous chapters in terms of methodological approach – though still qualitative, this research sought to: (i) explore the accounts of individuals who do not necessarily self-identify as users of the technology in question (unlike the self-conscious

engaged users of Facebook and Ghostery who were previously interviewed) and (ii) takes a more longitudinal, co-observant and ethnographic methodological approach in that users were interviewed over the space of six weeks. The participants involved were six first year, first term undergraduate students, whose positions as media students resulted in some interesting methodological outcomes in that the study mapped their development both as critical media studies students and as Google Now users. The chapter is broadly structured by the overarching sense of trust that participants invested in Google Now – despite the fact that the app's personalisation techniques repeatedly failed to live up to participants' high expectations. The chapter explores this tension between faith and failure, and argues that Google Now's personalisation framework is in fact deeply apersonal; that is, Google Now constructs an idea of what 'life should look like' that persistently failed to map on to participants' trajectories of every day experience. As the chapter explores however, despite their development as critical media students, these students legitimised such normative frameworks as 'for everyone' (yet not 'for them'). In doing so participants retained their faith that Google was capable of personalisation to an extraordinarily high degree.

Finally, a brief conclusion emphasises some core themes and findings that have emerged from my doctoral investigations, and explains how those core findings changed the trajectory of my research enquiries. I also discuss how the research might be further developed in the future.

Chapter Two

The drive to anticipate the user: contextualising contemporary logics of personalisation

Part I

Introduction

This chapter looks to situate contemporary[17] practices of algorithmic personalisation within broader historical and theoretical contexts, as well as relate those theories to wider critical notions of socio-computational management and (online) identity performance/ constitution. The chapter is split into three parts. In Part One I will detail how personalisation can be defined, critiqued and theorised. I focus on the distinction between system-initiated personalisation and user-initiated customisation – a distinction that forms a central consideration in my thesis. I will argue however that the terms 'user-initiated' and 'system-initiated' belie some of the complexities (and contradictions) inherent in contemporary personalisation, and as such will propose that while these terms are helpful, the term 'algorithmic personalisation' more accurately encompasses the entanglements created between user and system in the contemporary personalisation practices that are the focus of this thesis.

In Part Two I move on to explore how contemporary algorithmic personalisation practices can be contextualised in to wider critical, historical and political-economic frameworks. To do so, I explore some critiques of the opaque commercial data tracking systems upon which contemporary personalisation practices are contingent. I then outline how identities have come to be understood as constituted and critically theorised. I propose that technological developments in data tracking mean that users are no longer anticipated as demographically-

[17] For the purposes of this thesis, 'contemporary' refers to those practices that have emerged or are in operation during my doctoral research: that is, from 2012 to 2016.

defined and represented audiences (Cohen, 2013; Bolin and Andersson Schwarz, 2015; Ruppert, Law and Savage, 2013) or self-identified individuals, but through a process of correlation, 'mass individualisation' (Stadler and Mayer, 2009) and 'whole population' analysis (Ruppert, Law and Savage 2013). Furthermore, I will propose that algorithmic personalisation practices demand that individuals be constituted as *both* fixable, inner and largely unitary identities that can be efficiently identified and categorised *and* multiple, endlessly expressive, performative identities that can be recursively reworked.

I will use these models of anticipation to explore arguments that suggest personalisation practices might create new 'horizons of possibility' (Gerlitz and Helmond, 2013) that not only demand new considerations of identity construction but also potentially create and impose new 'grammars of action' (Cheney-Lippold, 2011) for data-tracked selfhoods. However, I argue that though algorithmic personalisation practices might create certain horizons of possibility for the users that become 'entangled' (Barad, 2007) with and within them, my research suggests that though these horizons might structure and even condition experience, the ways in which users negotiate these conditions mean such horizons are not necessarily always disciplinary or regulatory.

Finally, in Part Three I will argue that providers of algorithmic personalisation purport to 'assist' individual autonomy through discourses that celebrate neoliberal notions of 'networked individualism' (Rainie and Wellman, 2014). However I propose that algorithmic personalisation practices actually work to *undermine* the autonomy that the networked individual enjoys even as it aids it, by effectively 'outsourcing' the autonomy of the individual to the system and thereby creating a struggle for autonomy between the system and user – both of whom (which) are 'demanding' to be agents. This struggle for autonomy between user and system emerged frequently through all three of my site investigations, and so constitutes a central theme of this doctoral investigation.

I would like to briefly note that throughout this chapter I use the term 'user' without taking into account the specificities of who the 'users' of personalised technologies might actually be, and how their socio-technical contexts might affect how they are constituted as 'users'. I will dedicate more time to such complexities in Chapter Three (which outlines my methodological approach) and throughout my thesis; here however I would like to focus on algorithmic personalisation as a set of socio-technical practices underpinned by a socio-economic drive to anticipate the user.

Theoretically contextualising personalisation

Defining personalisation

What does 'personalisation' mean? At face value the term denotes a rather straightforward act – it is simply the 'action of making something personal, or focused or concerned with a certain individual' (OED, 2015). As this definition suggests, practically anything can be rendered personal – gifts, clothes, shoes and furnishings can be individually tailored to suit personal preferences (Getting Personal, 2015; Prezzy Box, 2015; Your Design, 2015); health care (Astra Zenica 2015), social care (NHS, 2016) and educational packages (Personalising Education, 2015) can be individualised; political campaigns (Ines, 2015) can be personalised to appeal to specific people. Most pertinently in regards to this thesis, a huge range of online and mobile hardware~~s~~ and softwares can be – and are – 'personalised' to some degree, as I will exemplify shortly.

As stated in the introduction, the commonality and breadth of what can be 'made personal' has lead Fan and Poole to state that 'the concept of personalization is intuitive but slippery' (2011: 183). The term is not so slippery that it evades definition altogether – as I explore below, there are scholars who have sought to pin down and scrutinise the term for academic purposes. However, the slipperiness of the term means that studies of 'personalisation' can be found in a broad range of disciplines, with Business and HCI/

Computer Science dominating current work on personalisation. Other subjects include the cognitive sciences, medicine, politics, geography, sociology, engineering and maths (Fan and Poole, 2011). My own search for resources has also revealed education (Hartley, 2012; Richardson, 1982), healthcare (Sanderson, 2014; Morgan, 2010; Mladenvo et al, 2001) and politics (Bennett and Sandberg, 2012; Blondel, 2010) as subjects in which 'personalisation' has been awarded academic attention. In an attempt construct an interdisciplinary definition that spans these fields, Fan and Poole describe personalisation as follows:

> *Personalization* is a process that changes the functionality, information access and content, or distinctiveness of a system to increase its personal relevance to an individual or category of individuals (2011: 183, original emphasis).

This definition is useful because it emphasises the importance of 'relevance' in the enacting of personalisation – that is, personalisation is a process of rendering something 'relevant' to an individual's or 'category of individuals' existing needs, desires and preferences. However, I want to point out that the assertion that personalisation can be applied to 'a *category* of individuals' might seem like a contradiction in terms, in that grouping individuals together surely negates the idea that personalisation can make something personal to the individual. In some ways this thesis proposes that personalisation enacted for a 'category' of individuals *is* a contradiction in terms – the personalisation practices I scrutinise deploy processes of mass-individuation that work to render personalisation practices ironically apersonal. I will explore this notion throughout my thesis, but it is interesting to note that this definition takes the notion that personalisation *can* be applied to category of individuals as a foundational premise.

As scholars such as Gillespie (2014), Van Couvering (2007) and Pariser (2011) note, the notion of individual 'relevance' can be problematised as I will explore further below. However, though Fan and Poole's definition is useful for highlighting 'relevance' as a condition for delivering personalisation, its universal application means that the definition

does not explicitly address how algorithmic or computational systems specifically might relate to this process. In a definition that does hone in on the computational applications of the term, Thurman and Schifferes state that personalisation is:

> [A] form of user-to-system interactivity that uses a set of technological features to adapt the content, delivery and arrangement of a communication to individual users' explicitly registered and/ or implicitly determined preferences (2012: 776).

Thurnham and Schiffere's definition is pertinent to this thesis for two reasons. Firstly, it highlights that in order to provide the 'relevance' that Fan and Poole define as integral to personalisation, computational personalisation systems must seek to 'know' or 'determine' an individual's pre-existing personal preferences. This thesis is especially interested in personalisation systems that seek to *implicitly determine* a user's identity and preferences (through the processing of data such as a user's browsing history, Facebook 'likes' or location) rather than *explicitly register* such identity and preferences (through asking a user to directly input their preferences/ identifying data into a system themselves, such as their name, gender, data of birth, favourite sports team or preferred music genre). Though articulated in different terms, the 'implicit determination' of user preferences draws strong parallels with Gillespie's notions of 'anticipating the user' (2014: 173) through data tracking. It is the implicit determination of users' needs, preferences and desires that opens up opportunities for the construction and management of the 'algorithmic identities' that, as explored in the introduction and throughout this thesis, makes the deployment of current personalisation practices possible.

Secondly, Thurnham and Schiffere's (2012) definition is important for this thesis as it also identifies the two agents constructed by algorithmic personalisation practices – that is the 'user' and the 'system'. As Sundar and Marathe (2010) identify, the differences between 'user' and 'system' as agents have led HCI researchers to define two types of personalisation; that is 'system-initiated personalization' (SIP) and 'user-initiated customization' (UIC). As the two terms suggest, the distinction between these two types of personalisation lie in *who* or *what*

initiates the personalisation process. Formally speaking, user-initiated customisation places the user as the primary agent, or 'gatekeeper' (Sundar and Marathe, 2010) of *what* is being personalised, *when*, and *how*, whilst system-initiated personalisation practices place the system in charge.

I want to complicate this distinction between user- and system- initiated personalisation in the next few paragraphs, but the distinction remains useful here in that there are quite a few contemporary personalisation practices that in some ways fit these models. Examples of *system*-initiated personalisation include: Netflix's movie and TV recommendation system, in which Netflix's prized recommendation engine computationally infers what a user might like to watch (Hallinan and Striphas, 2014); Facebook's News Feed in which Facebook algorithmically determines what a user's 'interests' might be and tailors their news feed to suit these determined interests (Facebook Help Centre, 2015); Google's Personalised Search, in which a user's search history is used (amongst other data) to personalise their returned search results; and Google Now, which aggregates personal data from a user's location history, browsing history (across devices), email contents, and other Google services to automatically deliver what Google Now deems to be 'the information you need before you even ask' (Google Now, 2015; see Chapter Six for further details). Examples of user-initiated customisation include: Gmail's design interface; which allows a user to explicitly change the colour and look of their Gmail inbox to suit their aesthetic tastes; Ghostery, which enables users to pick and choose, on a case-by-case basis, which trackers a user wants to block (Ghostery, 2013); and Netvibes, a personalised homepage service that allows users to customise their web homepage with the content and sites they choose to display (Netvibes, 2016). The crucial difference then between SIP and UIC is that SIP works primarily from *implicitly* gathered or inferred data to personalise the content or service in question, and in doing so places the system as the 'primary decision-making agent' (Sundar and Marathe, 2010: 310), whilst UIC uses *explicitly* registered data or user-controlled functions to personalise, thereby placing the user as the primary agent. In

placing the system as the primary decision-making agent, system-initiated personalisation therefore aims to act automatically and autonomously on behalf of the user.

There are two points to make about this distinction between user-initiated customisation and system-initiated personalisation. One is that even when the system is given gatekeeping agency, the user still functions as a 'data provider' for the system (Van Djick, 2013); that is, in order for the system to initiate any kind of personalisation practice, the user must still provide some kind of data or input in order for the system to act as a decision-making gatekeeper. It should therefore not be assumed that even when the system is given priority over the personalisation process that the user is not entangled with(in) the system – the user's data always informs the personalisation process to which the user is subject, even when they are not primarily in control of such processes.

Secondly, it is important to note that the line between 'user-initiated' and 'system-initiated' can become extremely hard to distinguish depending on the personalisation system in question; for example the personalised news app 'News Republic' denotes the user as the primary agent at the point of registration (wherein the user chooses between 200 news categories which news they would like to see), but thereafter relinquishes gatekeeping to the system's 'smart' algorithm which 'learns as you read and personalises your news experience automatically' (News Republic, 2015). Furthermore, even with more clear-cut examples of SIP, it is unusual that the user is denied all control or agency over what is being personalised – for example, although Google Now initiates and manages the personalisation of content, the user can customise or intervene in this process in a number of different ways (as explored further in Chapter Six).

Indeed, the engagements, interactions and tensions between user and system that emerged in my qualitative investigations highlight that the agential capacities of the personalisation system are not absolute, as I will explore in Chapters Four, Five and Six. That said many cultural

theorists, such as Ringrose and Walkerdine (2008), Adorno (1994) and Delueze (1992), have noted being awarded degrees of 'choice' or 'control' does not necessarily mean that individuals enjoy a greater horizon of possibility in the systems in which they find themselves embedded. As Chapter Four highlights, sometimes the choice that user-initiated customisation awards can actually be revealed as 'but an illusion', yet in this context such an illusion is based in *material* operations – that is, on the sprawling mechanics of back-end data capture, rather than the tyranny of choice – that is, on different types of identical 'star' (Adorno, 1994).

Thus though the distinction between user- initiated or system-initiated should not be taken as absolute, what is important is that, as Marathe and Sundar highlight, in demarcating the system as the primary 'gatekeeper' or 'decision-making agent', system-initiated personalisation '*places control outside a user's hands'* (2010: 313, my emphasis). Imbuing the system with such control and decision-making agency thus opens up critical considerations concerning the 'entangled state of agencies' (Barad, 2007: 23) that personalisation creates between user and system. Barad's term 'entanglement' is useful here as it encompasses the performative productions that emerge from the co-existence of agencies – that is, her work describes the relationships between both human and non-human actors (and also epistemologies) that work to produce and constitute the world as they exist in it. I will expand on the performative capacities of algorithmic personalisation later in this chapter, however here I would like to stress that as system and user have the capacity to act with and on each other (in performative ways as I will explore), the relationship between personalisation system and user can be considered an 'entanglement of agencies' (Barad, 2007: 18).

I believe that the terms 'system-initiated' and 'user-initiated', though valuable in demarcating the two poles integral to contemporary commercial personalisation practices, are somewhat unhelpful distinctions, because they place user and system in binary opposition. In fact, the entanglement between user and system means that the relations between these two agents is

much more nuanced than this binary suggests – both user and system inform the personalisation process. More crucial for this thesis, by becoming performatively entangled, both user and system *co-enact* and *co-constitute* the selfhood(s) being anticipated, as I will further expand on in the following sections.

The distinction between 'UIC' and 'SIP' is unhelpful; and yet, calling contemporary computational commercial personalisation practices simply 'personalisation' (as scholars such as Bodle and Pariser do) does not seem specific enough, given that mobile media, politics or healthcare could be personalised *without* any intervention by a computational system. Here then, the term 'algorithmic personalisation' seems most fitting. This term still captures the entanglements of user and system implicit in contemporary online commercial personalisation practices, and yet acknowledges the crucial interventions that algorithms make in the personalisation process. As the next section makes explicit, I am not the first researcher to critique the online, commercial, algorithmically-implemented personalisation practices that thesis explores; however other scholars such as Pariser (2011), Bodle (2014) and Fuez et al (2011) call this process 'personalisation', whilst others critique similar processes using terms such as user 'anticipation' (Gillespie, 2014) or 'intention' (Jarrett, 2014). The term 'algorithmic personalisation' is intended to bring these theorisations together, whilst acknowledging the specificity of algorithmic interventions into contemporary online personalisation practices as distinct from the 'personalisation' of politics, healthcare and even mobiles.

Algorithmic personalisation: Instrumental studies

Algorithmic personalisation systems have attracted huge amounts of attention in fields such as the computer sciences, education and business studies. Businesses and e-marketing scholars such as Arora et al (2008) and Vesanen and Raulas (2006) focus on improving personalisation strategies for businesses looking to target their users for marketing purposes. In the computer sciences, there is 'The Journal of Personalisation Research' (also called 'User Modelling and

User-adapted interaction') that publishes research on topics such as 'Personalised Information retrieval systems' (Vicente-Lopez et al, 2015), 'Personalised community recommendations' (Kim et al, 2013) and 'Personalisation and behaviour change' (Mashoff et al, 2014). There are other related terms such as 'user adaptation' (Khriyenko, 2015; Kulif et al, 2015), 'predictive analytics' (Mai, 2016), 'collaborative filtering' (Kappor et al, 2014; Zhu, et al. 2014) and 'recommendation systems' (Pazanni, 2007; Chen and Chen, 2013) that also have attracted attention in these academic fields.

Work on algorithmic personalisation in the computer sciences tends to treat personalisation as an instrumental practice, rather than one that requires critical scrutiny. That is, many studies assume that the application and development of personalisation softwares is unarguably 'beneficial' or 'necessary' to the users bound up in and subject to it. For example Mashoff et al. state that 'personalization plays an important role in [changing user behaviour], as the most effective persuasive motivational strategies are likely to depend on users characteristics such as the user's personality, affective state, existing attitudes, behaviour, knowledge and goals' (2014: 344). It is proposed thus that personalisation is 'effective' in changing user behaviour, yet the question of whether personalisation *should* be deployed in such a manner, what constitutes 'effectiveness', and for whom 'effectiveness' operates is not broached. Similarly Vicente-Lopez et al. state that 'due to the information overload we are faced with nowadays, personalization services are becoming almost essential' (2015: 1). Such studies therefore approach algorithmic personalisation from an instrumental perspective rather than a critical one.

Theoretical critiques

The works of critics such as Bodle (2015) and Pariser (2011) seek to critique algorithmic personalisation practices, along with writers such as Stalder and Mayer (2009), Turow (2011) and Fuez, Fuller and Stadler (2011). These commentators have sought to criticise the potentially detrimental consequences of personalisation of the web for users – Pariser coins the

term 'the filter bubble' to describe the reductive and fragmenting effect that personalisation can have on users' web practices. He describes a hypothetical 'You-Loop' that is created by only viewing personalised web content that is tailored to your pre-existing habits and preferences. He writes:

> Personalization can lead you down a road to a kind of informational determinism in which what you've clicked on before determines what you see next—a Web history you're doomed to repeat. You can get stuck in a static, ever narrowing version of yourself—an endless you-loop (2011 :16).

Stalder and Mayer also propose a similar argument in their analysis of Google's personalised search results –they propose that '[i]f future search engines operate under the assumption that everyone's world is different, this will effectively make it more difficult to create shared experiences' (2009: 113). They present a further critique of personalisation, one which focuses on the effect of anticipation on the user. They argue:

> A search engine can never 'know' a person in a social sense of knowing. It can only compile data that can be easily captured through its particular methods. Thus, rather than being able to draw a comprehensive picture of the person, the search engine's picture is overly detailed in come aspects and extremely incomplete in others… Any conclusion derived from this incomplete picture must be partially incorrect, thus potentially reinforcing those sets of behaviours that lend themselves to data capturing and discouraging others (2009: 112).

Their argument here draws some parallels with Jarrett, who, as I will explore in the following sections, proposes that Google's 'database of intention' (2014: 22) can only ever be an incomplete profile of users. Jarrett goes on to stress however that despite this fragmented and incomplete capture processes, Google's compilation of 'database subjects' can still *act* on the users they reflect none-the-less (2014). I return to this point later and in Chapter Six, but here I would like to note that Stalder and Mayer's argument is useful for thinking not just about what personalisation does to a users' *worldview,* but how a user's own *selfhood* intersects with algorithmic personalisation. I would add to this however that even if Google could 'know' a user in the 'complete' 'social sense' as Stalder and Mayer suggest (and knowing anyone

completely in a social sense seems problematic given work on identity performance and performativity, explored shortly), there remains room for critique. That is, even if Google's profiling was somehow complete, or if it could correct those 'partial incorrections' on which it is currently built, the company's discursive frameworks, computational discourse and *ways* of knowing a user would still hold critically implications for how that user is known, as I will explore in Chapter Six.

Bodle's work on 'predictive algorithms and personalization services' echoes many of these scholars' sentiments. He outlines the 'unintended consequences, biases and costs including social discrimination, political polarization and the erosion of personal autonomy and human volitions' (2014: 130) that online personalisation can create. He reinforces Pariser's argument that personalisation algorithms 'limit one's exposure to information outside one's range of knowledge and experiences' (2014: 131) and also argues that 'data-driven personalization practices reveal the fundamental inequality between members, advertisers and companies' (2014: 131) by awarding more power, control, and value (social, monetary or otherwise) generation to advertisers and platform providers than the users. Bodle also argues of Facebook that 'with the developments of analytical services based on predictive algorithms, Facebook pushes personalization beyond predicting to shaping what people want to do even before they realize it' (2014: 137). I will expand of this theory shortly but here I want to highlight another of Bodle's theorisations:

> Insights into the operational logics of Facebook's algorithm reinforce an understanding of the company's underlying business model that is predicated on tracking users and amassing data tied to *fixed identities* (2014: 137, my emphasis).

I highlight the term 'fixed identities' here because although Facebook certainly looks to track users in the aim of revenue generation, the notion that algorithmic personalisation practices are predicated on the idea of 'fixing identities' is in fact complicated not only by the computational-marketing analyses undertaken by Schwarz-Andersson and Bolin (2015), but also but theories of identity constitution by Jordan (2013, 2015) and Cover (2012) as I will

explore shortly. Furthermore, my own research also complicates the notion the algorithmic personalisation looks only to 'fix' user identities, as I shall explore through this thesis.

Scholars such as Van Couvering (2007), Pariser (2011), Gillespie (2014) and Hillis, Petit and Jarrett (2013) have critiqued the notion of 'personal relevance' that as aforementioned, is integral to algorithmic personalisation. As Gillespie argues, though 'personal relevance' is commonly assumed to be beneficial to users by the platform providers such as Facebook, Google and Netflix, he notes that "'relevant" is a fluid and loaded judgments, as open to interpretation as some of the equivalent terms media scholar have already unpacked, like 'newsworthy' and 'popular"(2014: 174). Van Couvering takes this further, observing that over the past few decades since the conception of search engines, 'relevance has changed from some type of topical relevance based on an applied classification to something more subjective' (2007: 186). Differently put, contemporary notions of what is 'relevant', at least in relation to digital practices, are now measured in relation to *individual users* rather than in relation to an idea of 'objective' relevance. Furthermore, Hillis, Petit and Jarrett note that for Google 'the perfect search engine would understand exactly what you mean and give you back exactly what you want.' (2013: 55), arguing thus that 'achieving perfect relevance would be akin to the technology seeming to read one's mind' (2013: 55). I will return to Google's dream of perfect relevance in Chapter Six, but here I want to note that these critical interrogations help to complicate the idea that rendering something personally relevant via algorithmically means is an instrumentally beneficial act.

There is some work in the fields of digital television studies that also relates to algorithmically-implemented personalisation – for example Bennett's (2008) work on i-television seeks to map the increasingly individualized 'prosumption' of television with developing digital practices, whilst Enli argues that digital personalisation can 'cultivate a new form of communicative relationship' between broadcasters and viewers (2008: 108). Finally my own work on

individualised television prosumption looks to critique the algorithmic intervention into narrowcasting and broadcasting techniques (Kant, 2014). I argue that algorithmic interventions in increasingly individualised viewing practices undermine the 'consumer sovereignty' traditionally championed by advocates of 'narrowcasting' (Kant, 2014). These works are relevant here because they emphasise that the individualisation of consumption/ prosumption is not new to contemporary online environments – rhetorics and frameworks of individualisation predate algorithmic personalisation by many decades, as I will explore below. However these critiques of earlier media systems also work to highlight the specificity of algorithmic interventions into the delivery of 'personally relevant' media and so have significance in regards to this thesis.

Research by Hosanger et al. (2013) and Koutra et al. (2014), has sought to find quantitative, big data-based evidence (conducted through the data-scraping of sites) of the 'filter bubble' that personalisation might create for users. On the one hand, Hosanagar et al. propose in their study of personalisation on iTunes that through the inclusion of popular content into recommendation systems (as well as content determined by the user themselves), 'personalization appears to be a tool that helps users widen their interests, which in turn creates commonality with others' (2013: 1). On the other hand, Koutra et al.'s (2014) study regarding news consumption of the Sandy Hook shootings of 2012 supports Pariser's arguments, concluding that 'all in all, people use the Web to largely access agreeable information' that ultimately 'provides a myopic view' (2014: 8) by directing web users to content that always already matches their existing socio-political viewpoints. The contrasting outcomes of these studies to me highlight the important of context-specific research, and suggest that algorithmic personalisation creates different 'horizons of possibilities' for users depending on the context.

Software Studies theorists Fuez, Fuller and Stalder also take a quantitative yet critical approach, this time in relation to the effects of Google's personalised search results. Their paper 'tries to

assess the current reality of the personalization of search results' (2011) by performing a total of 18,211 search queries under three fictional Google profiles. Their findings suggest that Google's 'promises of personalization', including improved individual relevance, are in fact 'inverted' by Google's attempt to anticipate the user by demarcating them into identity categorisations. They state that due to Google's group data aggregation and profiling mechanisms '[r]ather than seeing what is of most interest to the user as an individual, we are presented with a preselected image of the world based on what kind of group the search engine associates us with' (2011: np).

Fuez, Fuller and Stalder thus suggest that personalisation practices can ironically create deeply apersonal systems of homogenisation, through computationally structured frameworks which seek to socially classify the 'person' for whom personalisation is enacted. Their analysis not only highlights the problem with Fan and Poole's definition that personalisation can be imposed on a 'group of individuals' (2011: 183) but also resonates with Bourdieu's theories of social distinction, wherein the individual is classified and legitimised as 'an individual' via fields of collective social hierarchy and construction (1984). That is, 'taste classifies and classifies the classifier' ([1984] 1998: 73), but here taste is inferred and assigned via *algorithmic* and not only social mechanisms, that seek to 'know' a user's habits and group them with others – thereby classifying the classifier nonetheless. I will expand on this in Chapter Five, as well as the ways in which personalisation structures 'the personal' at various points throughout this thesis. Here however I want to highlight that Fuez, Fuller and Stalder explore the apersonalising nature of personalisation through quantitative data-scraping methods, whereas I employ a qualitative method to approach similar implications.

All of the above works have played an invaluable role in laying the critical foundations of this thesis. By critically interrogating the socio-cultural assumptions and structural operations inherent in algorithmic personalisation practices, they highlight that even when computational

systems successfully deliver 'personal relevance' (even from the perspective of the user), such systems can have complex socio-cultural implications for how users are understood, classified and delivered information. However, whereas these works employ *theoretical* or *quantitative* methodologies to explore the implications of personalisation in everyday life, I intend to add to these studies by approaching user engagements with algorithmic personalisation through a critical yet primarily *qualitative* and loosely *ethnographic* methodological framework, as I will explore in Chapter Three.

Through this qualitative approach, my thesis looks to explore the further implications of personalisation for users – going beyond the headline effects of Pariser's 'filter bubble'. Indeed I am interested in what is harder to see or take hold of: as my investigations highlight, the reductive effects of personalisation might largely remain unknowable and opaque to users themselves, and yet this does not mean that the lived experiences of users cannot contribute to research on algorithmic personalisation. For example, largely opaque and unknowable third party personalisation practices emerged in the accounts of the Ghostery users contained in Chapter Four. However the reported invisibility of algorithmic personalisation emerged not as absolute but partial – that is, these users knew they were being tracked and anticipated, but the specifics of how, when and to what end remained (potentially always) unknowable. Furthermore, by taking a critical yet qualitative approach, it becomes possible to theorise *how* users make sense of not just the world, but how users negotiate the ways in which their own identities are anticipated via algorithmic personalisation. In doing so it becomes possible to consider the nuances and complexities of how algorithmic personalisation must be navigated and understood as a process engrained in everyday life.

The following two parts work out from this body of literature that refers directly to algorithmic personalisation. In Part Two I will expand on the data tracking practices introduced in Chapter One, but will also consider how theories of identity relate to my work – especially in relation to

the historical development of data tracking that has lead to the anticipated individuals that currently traverse commercial web platforms.

Part II

The opacity of data tracking

As stated in Chapter One, the practice of tracking users is far from uncommon on the contemporary web. Data tracking is not only directly undertaken by first party platforms but also fuels a booming 'back-end' business of third parties who do not offer any front-end services yet are interested in 'knowing' web users for business-to-business and other commercial purposes, as explored at length in Chapter Four. In their investigations into third party tracking, Falagrastegar et al. 'observed the presence of third-parties on over 80%' of the Alexa top-500 websites, 'in twenty-eight countries from all over the world' (2014: 2).

First and third party tracking has been critiqued by scholars such as Nissenbaum and Brunton (2011) McStay (2012), Berry (2013) Ruppert, Law and Savage (2013), Chan (2015) and Peacock (2015), who note that commercial data tracking is not only a ubiquitous feature of the commercial web landscape, it is also largely opaque and invisible to the users who are being tracked. Organisations and commentators such as The Day We Fight Back (2014), Electronic Frontier Foundation (2013) and Aral Balkan (2015) have called for greater transparency, user choice, and more opportunity for users to refuse third party data tracking, as I explore in Chapter Four. Nissenbaum and Brunton's work on 'data obfuscation' (2011) in particular helps to highlight some of the critical implications of invisible yet commodifying data tracking practices. They identify two types of 'asymmetry' that commercial data tracking creates between users and platforms. One is 'power asymmetry' in that 'we have little or no say when monitoring takes place' and the other is '*epistemic asymmetry'* (2011: 14, my emphasis). They state of epistemic asymmetry:

> We are often not fully aware of the monitoring [by data trackers], and do not know what will become of the information produced by monitoring, nor where it will go and what can be done to it (2011: 14).

The notion of epistemic imbalance between platform providers and users is important to this thesis because throughout my investigations there emerged in participant accounts what I term to be *epistemic uncertainty* created by that asymmetry. That is, the unequal distribution of epistemic knowledge production between the platform seemingly 'knowing' the user through data collection, compared to the unknowable ways that participants felt they were being tracked and anticipated, resulted in significant uncertainties for how users negotiated their sense of control, autonomy, expertise and identity. Furthermore, these epistemic uncertainties were generated in different ways depending on the context – at times, epistemic uncertainty was articulated as *anxiety* in some participant accounts (over how to protect oneself from the threat of data tracking) and yet also emerged as *trust* in other participant accounts (over what could be algorithmically personalised, how and when).

As I will explore, by considering data tracking as a process that creates uncertainty in users, I can consider why some users of personalisation technologies (such as the Google Now users I interviewed) continue to embrace what seems to be a contradictory stance of caring about online privacy invasion caused by data tracking but take no tangible actions to protect it; and why other users (such as some Ghostery interviewees) embraced the perceived benefits of the personalisation practices whilst resisting the privacy-invading data tracking upon which these practices rely. More than this though, the invisible and opaque ways that data trackers identify users also have implications for how those users are constituted as 'knowable' entities, through mechanisms that seek to know and anticipate the identities of users. The following section therefore turns from data tracking towards the constitution of (algorithmic) identity.

(Algorithmic) identities

Theories of identity

As processes of algorithmic personalisation involve 'knowing' and 'anticipating' the user through the constitution of 'algorithmic identities' it is important to acknowledge and explore how such algorithmic identities have come about, and how they fit into wider theories surrounding identity constitution. After all, if 'personalisation' involves rendering something personally relevant, then what do we mean by 'person'? To explore this question it is first useful to scrutinise not just 'algorithmic' or 'online' identity but more general concepts of what is meant by personhood, the self and identity. The following outline of theories of selfhood is only partial, but does give a brief foregrounding of some of the theories that form the foundation of my thinking around identity in this thesis.

Scholars such as Stone (1995), Geertz (1993), Foucault (1988), Boellstorf (1988) and Rose (1991) acknowledge that 'the notion of the self as we know it' (Stone, 1995: 89) is largely underpinned by a particular formation of the self as *inner*, *unique* and *unified*. Rose asserts that the notion of the self as a 'unique identity' largely emerges from Christian doctrines, which 'furnished [Ancient Roman concepts of] juridical and political personality with an internal existence in the form of a conscience' (1991: 221).[18] Stone similarly recognises that this notion of selfhood developed into a 'classic bourgeois worldview' of the self, which emerged around the late 1600s and was part of a wider political and epistemological shift which saw the world structured 'into the form of binary oppositions: body/ mind, self/ society, male/ female and so on' (1995: 89). These binary oppositions, especially the Cartesian view that the mind existed metaphysically separate from the body, gave rise to the idea, developed through the 17th and

[18] Foucault's work on the 'technology of the self' (1988) details the changes to how the self was formulated and legitimised through historically specific operations during these centuries. However, though there were great developments in how the self was operationalised, Foucault's works suggest that these historically situated constructions of self treated the self as an inner entity that inhabited the body (1988).

18th Centuries that the body housed a conscious, rational and 'unitary monastic identity' (Stone, 1995: 43). Geertz asserts that this 'Western conception of the person' is thus:

> [b]ounded, unique, more or less integrated motivational and cognitive universe, a dynamic centre of awareness, emotion, judgement and action organized into a distinctive whole (1989: 59).

Scholarly scrutiny into the inner workings of the self continued in the development of social anthropology and psychology in the late 1800s and early 1900s (Matellart and Martellart, 1998; Boellstorf, 2005; Rose, 1991). However, these disciplines also began to acknowledge the role that social interaction had in the formation of this selfhood. These anthropological and psychological studies led to the development of ethnographic approaches by the Chicago School in the 1920s, which began to investigate how individuals as agents negotiate the structures that sought to govern them, especially at the level of everyday life (Matellart and Matellart, 1998). From the 1940s onwards, theorists such as Weber (1947) increasingly foregrounded their research in the importance of group and social interactions for constituting the identities of the individuals that formed that group. The work of writers such as Strauss recognised that:

> Group membership is… a symbolic, not physical matter, and the symbols which arise during the life of the group are in turn, internalized by the members and affect their individual acts (Strauss cited in Stone, 1995: 87).

With the establishment of the notion that individual identities were constructed through group interaction came the increasing questioning of the long-standing assumption that the self was a unified whole that pre-existed such social interaction. Notably Goffman (1959) proposed that we 'perform' multiple selfhoods that are called on and enacted depending on a person's specific social situation, and in doing so further questioned longstanding notions that the self was necessarily unitary and holistic.

Work on the self increasingly sought to interrogate the relationship between the agencies and identities of individuals and the structural operations, as well as discursive frameworks, that constituted and contextualised the individual. Foucault sought to position 'the body' as constituted (and disciplined) by and within specific historical socio-contexts, in which 'the body is the inscribed surface of events' (1988: 1480); that is, the body is a site of culturally contested meanings upon which discourses of governance and power are imposed, fought and written (1988a).

Mattelart and Mattelart (1998) note that theorists such as Hall, Liebes and Katz sought to bring attention to the *agency* of the individual produced by discourse and engrained in structural formation. They note that such scholars 'restored the activity of the reader' (1998: 128) – for example, Hall's work examines not just how dominant ideologies and producers 'encode' meaning but the ways in which individuals decode meanings in negotiational, interpretational or even oppositional ways ([1980] 1999). Thus, the self, though still structured by social conditions, discourse and operations, was increasingly acknowledged as a negotiational agency.

Other theorists such as Lasch focused on the increasing importance of individualism in late-capitalist societies, emphasising both excessive consumption and self-centric ideologies that produced what Lasch called 'the culture of narcissism' (1979). The idea that the self constituted a highly individualised yet malleable performance thus led to further – rather different – developments in how the self was theorised; for example Gidden's work treats selfhood in 21st century Modernity as a 'reflexive project of the self', in which the self can be continuously and reflexively reworked (1991).

Increasingly then, as Hall (1996) notes, in the late 80s and early 90s the very *idea* of identity began to be questioned. For example, Butler sought to build on Goffman's notion that identity

can be considered as 'performance', but argues that such performances are not exterior to our sense of selfhood but produce and constitute that very selfhood. Butler's work thus corresponds to Foucault in that the self is produced through discourse, but also marks a departure from Foucault in that 'the body' is not simply inscribed with it (for this, Butler argues, paradoxically suggests the body exists outside the discourse which produces it) but is instead intrinsically 'performative' (1988; 1990). In her now well-established theory of how gender identity might come to be constituted, Butler states:

> Gender cannot be understood as a role which either expresses or disguises an interior 'self'… As performance which is performative, gender is an 'act', broadly constructed, which constructs the social fiction of its own psychological interiority. As supposed to a view such as Ervin Goffman's which posits a self which assumes and exchanges various 'roles' within the complex social expectations of the 'game' of modern life, I am suggesting that the self is not only irretrievably 'outside', constituted in social discourse, but that the ascription of interiority is itself a publicly regulated and sanctioned form of essence fabrication (1988: 528).

For Butler then, acts of identity performance are not just exterior acts but materialised and therefore constitutive of the very identity that they seek to perform. Butler's theories thus throw the idea that identity is unified, stable and somehow pre-exists cultural construction very much into question. This thesis therefore takes Butler's notion of performativity as a central concern, yet also recognises (as Butler herself does) that traditional notions of selfhood as holistic, inner and unified still strongly resonate in contemporary popular treatment of the self, as exemplified in Zuckerberg's statement that 'You have one identity'. With this in mind, it is useful to turn to how identity has come to be understood, constituted and theorised in computational contexts.

The early net and online identity

The development of the Internet in the late 1960s and subsequent World Wide Web in the mid-1990s (developments explored further in the next section) brought with it new opportunities to debate, discuss and theorise identity in a space that appeared to separate body

from self. Writers such as Turkle (1997), Stone (1996), Rheingold (1996), Roberts and Parks (1999), Kennedy (1999), O'Brien (1999), Donath (1999) and Bassett (1997) explored the potentials and problems of articulating, maintaining and (re)constituting identity in the 'meatless' environment of the text-based 'virtual communities', MOOS, MUDs and other online forums that the web at that time facilitated. Turkle approached these forms of web-based communication and community as an opportunity 'for discovering who one is and wishes to be' (1997: 184), stating that 'when we step through the screen into virtual community we construct our identities on the other side of the looking glass' (1997: 177). Turkle's approach to identity thus treated the web as a space that opened up *potentials* for the reconstruction and reconfiguration of selfhood. Similarly, Rheingold also described these new 'virtual communities' as 'a place where identities are fluid… we reduce and encode our identities as words on a screen, decode and unpack the identities of others' (1993: 61).

In her work on gender identity in relation to online community LamdbaMOO, Bassett notes that the articulation of identity 'beyond the flesh' (but *not* necessarily 'beyond the body') created a 'tension between gender play one hand, and a fairly rigid adherence to gender norms on the other – suggesting that as cyber-subjects, standing in a new relation to the body, which we may regard as potentially liberating, may also be understood to emerge through the power structures and gender asymmetries operating in Real Life' (1997: 538). Such theorisations, along with those of Bulkhalter (1999) and Nakamura (2002), emphasise that though the self might be separated from the physical site of the flesh, the culturally-coded body continued to inhabit cyberspace.

The debates concerning online identity in regards to the early web approached text-based online communication as a space that could *potentially* reconfigure identity – or at least that identities might have the opportunity to be reflexively reconsidered (Turkle, 1997), be made 'fluid' (Rheingold, 1999), or 'played with [as] multiple subjectivities' (Bassett, 1997: 539).

However these writers *also* raised questions about the socio-cultural codes, pressures and ideologies that restricted and reinforced identity configurations both 'online' and 'offline'. In this sense, the debates surrounding online identity at this point framed identity articulation, maintenance and performance as somewhat 'up for grabs' – that is, the text-based communication technologies at the time allowed for *potentially* anonymous refashioning of identity that demanded a reconsideration of how identity was theorised.

As Cohen (2013) and Turow (2012) recognise and as I will explore below, at this point (the early to mid-1990s) individualised data tracking was still in its embryonic stages – internet users could not be tracked or implicitly identified by platform providers, and their individual habits, preferences and identities could not be inferred to the depth and complexity that they are in today's landscape. It is here then I want to emphasise the historical specificity of this context: articulations of online identity in this era of the net's history were debated with a socio-cultural situation in which individuals *could not be computationally tracked and algorithmically categorised* in the ways that they are now. That is, though platform providers actively sought to attract and in some ways commodify user interactions (as I expand on below), platform and content providers simply could not algorithmically identify individual users – they had to either categorise such users via traditional advertising demographics, or users had to (mis)identify themselves, or (mis)identify other users.

The widespread implementation of commercial HTTP cookies in the early 2000s (Turow 2011; Peacock, 2015), combined with other data tracking technologies, can be seen as marking a crucial departure then in regards to online identity, in that the development of such technology marked the beginning of the possibility to identify users – often for revenue generating purposes – via algorithmic and computational means. I consider such a development crucial in regards to understanding *why* algorithmic personalisation has come to have such a vague yet persistent presence on so many contemporary commercial platforms, and so I would like to

expand on these developments now by turning from identity theory to political economy, in order to chart how users have been identified, anticipated and tracked in the last few decades.

The commercial development of the data tracked individual

How did today's data-tracked individual come to exist? As is widely recognised and as stated in the introduction, the tracking and anticipating of users provides a key form of revenue generation for most of the large commercial free-to-use services (such as Google, MSN, Facebook and Yahoo) that currently dominate as content and service providers on the web. As such, it is worth briefly mapping the commercial development of the web and internet.

Mapping this commercial development from the beginning is a complex task – as scholars such as Abbate (1997, 2007) and Campbell-Kelly and Garcia-Schwartz (2013) note, though it is commonly accepted that the internet began with DARPA's Arpanet in 1969, its subsequent development was driven by a 'multitude of actors' (Abbate, 2007: 11), some of which were US state-funded (such as the NSF) and others who were commercial enterprises (such as IBM) (Abbate, 2007). I feel that an in-depth historical analysis of the development of the early net and World Wide Web lay beyond the scope of this thesis, however there are some points that require acknowledgement. One is that though there are a number of narratives and counter-narratives in circulation regarding how the commercial net came into being (Campbell-Kelly and Garcia-Swartz, 2013), most of these narratives agree that in the early 1990s, the internet was subject to rapid moves towards privatisation (Campbell-Kelly and Garcia-Swartz, 2013; Abbate, 1999, 2007; Curran and Steaton, 2010). Abbate argues that this privatisation may have been driven by 'technical necessity' (2007: 14) rather than commercial interest, yet the once US state-funded Net was increasingly privatised nonetheless. The second point I want to make is

that at the same time this privatisation was taking place, the World Wide Web[19] was being made freely available and becoming increasingly popular. Abbate notes:

> The spread of the Web created new demand for Internet access among the general public just as commercial ISPs [internet service providers] were positioning to meet that demand. This makes it difficult to separate privatization's benefits from those of the web (17: 2007).

Here then Abbate observes that the freely available Web emerged on top of and in conjunction with the commercial ISPs that were also gaining popularity in the early/ mid 1990s. This leads to the third point to be made here; the net's privatisation was accompanied at this time by an oppositional discourse that the Net should be a *public*, *open* and *free* resource. These discourses again emerged through different actors – US politicians such as Al Gore wanted the Net to be an open, widely-available pubic service (Abbate, 2007), the scientific networks that the Net originally fostered similarly wanted a collaborative, non-commercial network (Curran and Steaton, 2010), whilst some Net users themselves were also calling for the Net to remain a public service (Abbate 2007). Furthermore according to Curran and Steaton, founder of the World Wide Wed Tim Berners-Lee was also 'inspired by two public service precepts: the need to create *free* public access to shared cultural resources… and the need to bring people into communion with each other' (2010: 263). Such narratives thus emphasise the 'publicness', 'freedom' and 'commonality' that the internet and world wide web could facilitate. Finally, inhabitants of virtual communities such as Rheingold (1996) also expressed impassioned pleas that such communities be left free from commercial encroachments.

However, not everyone saw the increasing commercialisation of the web as a threat to the web and internet's emancipatory and egalitarian power. Business scholars Hagel and Armstrong disagreed with Rheingold and others that virtual communities should be inherently 'anti-commercial' and instead argued that 'profit motives will in fact enhance' both community

[19] The World Wide Web was developed in 1991 by Tim Berners-Lee (as explored below) and is described by Curran and Seaton as 'a software program that enabled people to access, link and create communications in a single global "web" of information' (2010: 255).

interaction and individual consumer power (1997: x), as I will explore below. Similarly, building on the ethic of individualism advocated by business innovators such as Brand (1988), web celebrants such as Negroponte (1996) and Gates (1995) advocated that the commercialisation of the web could bring about greater user power, increased individual freedom in the form of greater consumer choice and a more personalised interaction with content providers, businesses and services. For example, Negroponte (1996) envisioned that the web did not only function for the needs of the virtual community, but also the needs of the *individual*. By facilitating the creation of 'boutique industries' that could cater for individual needs and desires, Negroponte argued the web could bring about a new form of personalised media consumption in the form of 'The Daily Me' – an ideal of an acutely personalised newspaper that could deliver personally relevant news and entertainment to an individual in ways not possible with mass media. Other celebrants of the net's individualising capabilities such as Gates saw similar potential in online services to provide computational 'personal assistants' (Gates; 1995) and personalised entertainment that would one day be able to automatically suggest and deliver 'relevant' content based on individual preference.[20] In these arguments, the commercial benefits to the individual thus began to emerge alongside counter-discourses that celebrated the net as collaborative and public.

As I will explore, 'The Daily Me', 'personal assistants' and personalised entertainment all came to be (problematically) realised in some form with the development of Web 2.0. However, despite these optimistic calls that a personalised web could bring great individual choice *and* generate profit, during the early to mid 90's as Hagel and Armstrong (1997), Turow (2011) and Curran and Steaton note (2010), most companies were struggling to find ways to successfully monetise their online enterprises. To elaborate, Hagel and Armstrong note in 1997 that

[20] In some ways these discourses of individualism and personal freedom draw parallels with some of the non-commercial ideals already established by early Net users – for example, Barlow's *Declaration for the Independence of Cyberspace* advocated that the web be a space that could 'naturally' advocate individual freedom, free from state intervention (1997).

'commercial enterprises are relative newcomers to the online world, and so far few of them have made money' (1997: 3). They state that:

> Most business on the Internet and other networks today do little more than advertise their wares on 'billboards' on the World Wide Web… these old-media advertisers, dressed in new-media clothes, are only one indication that marketers have yet to discover the secret to unlocking the revolutionary potential of the internet (1997: 3).

Turow notes that at this point online banner ads sold to advertisers functioned largely the same way that traditional ads worked; however, they had the added benefit that advertisers could tell when someone had clicked on their ad (through the 'click-through' model). As such, data tracking began to emerge as a market practice, but as Peacock notes at this time 'data exchanges between Internet users' computers and a remote server were anonymous' (2014: 5). This meant that online advertising strategies could not personally identify or anticipate individuals – instead, 'online ad space was based on proximity to content' (Cohen, 2013: 78) and it was the attention of the *audience or demographics* of a site that was sold as a commodity rather than individual attention. If platform providers such as AOL, Prodigy or CompuServe wanted to 'know' their users' specific identity categorisations, they had to encourage users to explicitly input personal data about themselves through registration forms and self-constructed profiles, or through explicitly registered transaction data (Hagel and Armstrong, 1997). That is not to suggest that these explicit forms of identity registration, profiling and articulation did not come with critical considerations,[21] however the anticipation of online identities *could not be achieved through inferred determinations as with today's algorithmic personalisation practices.*

However by the mid-late 1990s, these 'old-media' market models were changing. Hagel and Armstrong painted an optimistic picture of the potentials of the internet to transform media

[21] As the work of Bassett (1996) and Killoran (2002) highlights, the restrictive interface and computational architectures provided by early platform providers such as Geocities still sought to redirect users' actions and trajectories through systems of governance that could be successfully made profitable. However though such systems of registration and identity articulation can be considered regulatory, the development of personalised, cross-platform data tracking brought about fresh implications for notions of identity governance, as I explore shortly.

marketing via data aggregation and extensive user profiling. They argue that these new online, *cross-platform* market models would bring 'enhanced ability to target' (1997: 11):

> Virtual communities will accumulate detailed profiles of members and their transaction histories, not only with a single vendor but with multiple vendors across an entire product category (1997:11).

They go on to state that '[b]y aggressively using this information to tailor products and to create product and service bundles, vendors can both expand the potential customer base and generate more revenue from each customer' (1997: 11). They thus envision a market model that looks something like the data tracking, anticipation strategies and personalisation of content and services that are being mobilised on the contemporary web. There is one point at which they mark a departure however – they speculate that 'ownership of these profiles is likely to shift over time to the community members themselves and will be accessed by vendors *only on terms established by individual members'* (1997: 11). As the works of Peacock (2014), McStay (2012), Andrejevic (2013) and Jordan (2015) highlight, ownership of personal data on the contemporary web lies very much in the hands of platform and service providers, and so Hagel and Armstrong's latter prediction has not (yet at least) come to pass.

I will return to the latter point regarding consumer control shortly, but here it is important to note a technological development that in some way realised Hagel and Armstrong's vision: the development of the HTTP Cookie. First developed in 1994 and used commercially by 1998, the cookie is defined by Peacock as a small piece of code that facilitates 'a way of storing information on the user's computer about a transaction between a user and a server that can be retrieved at a later date by the server' (2014: 5). The cookie became the primary data aggregation tool for commercial content and platform providers interested in knowing and anticipating their users. As Turow recognises, in the early years of data tracking, 'the cookie allowed websites to quietly determine the number of separate individuals entering various parts of their domains and clicking on their ads' (2012: 49), highlighting that cookies marked the first

move towards the individualisation of what was formerly audience or demographic data. Peacock's historical analysis of the development of the cookie acknowledges that user consent and control *was* at first taken seriously by the cookie's developers – in a draft paper that discussed the privacy implications for the tracking of users through cookie technologies, 'an extensive section is devoted to privacy problems and discussions on the rights of users to remove or generally cap cookies' (2014: 11). She states that in these suggestions, 'full agency is attributed to online users' (2014: 5). Crucially however, she notes that the measures implemented to protect users' privacy and agency were quickly removed – users lost the right to 'remove and cap cookies' (2014: 5) before the technology even became widespread.

It is through the development of the cookie in the late 1990s, combined with a market model that favoured (targeted) advertising over pay-to-use service models that the contemporary web economy starts to emerge. As Curran and Steaton note, the development of a privatised web in conjunction with narratives of public access and freedom 'had accustomed people to expect softwares and content to be free' (2010: 253), rather than pay subscriptions or registration fees to access services, platforms or content (as with some TV satellite services or newspaper subscriptions, for example). In doing so the development of the web economy followed a market model that relied on advertising as a primary revenue generating strategy; but crucially in regards to this thesis, a strategy that increasingly sought to anticipate, track and target individual users rather than audience demographics. Through the implementation of this market model and the development of cookies, by the early 2000s the world's most-used web sites began to feature some of the key players still in play today – companies such as Ebay, Amazon and Google. Such companies could – and still do – attract large numbers of users whilst still retaining the attractive free-to-use model implemented by earlier (but less commercially successful) sites such as Geocities and Netscape. Thus free-to-use web services, funded by (increasingly targeted) marketing strategies rather that pay-to-use mechanisms, can be considered one of the key economic models currently driving the contemporary web.

As this web economy has developed, data tracking has become more and more complex – since as Turow notes, 'entrepreneurs looked to the cookie as the natural vehicle to learn more and more what people were doing' (Turow, 2011: 54). Turow further highlights that the emergence of *cross-platform* tracking paved the way for users to be anticipated across sites (2011: 58), and that ambiguous laws surrounding the legality of such tracking meant that trackers did not have to gain consent from users, meaning that user data could be harvested without the user's knowledge (Turow, 2011). The Cookie Directive of 2011 means that at current, EU sites must alert users to the presence of cookies on their websites, however scholars McStay (2012), Turow et al. (2015) and Peacock (2014) argue that even these 'alerts' fall woefully short of awarding users full and informed consent, as I will explore further in Chapter Four.

Peacock (2015) and Nikiforakis (2013) note that HTTP cookies marked only the first step towards data tracking – many more technologies have developed since the mid-2000s. Peacock states that at present 'online users are dealing with embedded objects called "supercookies", "zombiecookies", ubercookies or evercookies and these tags are no exaggeration' (2015: 6) since these new forms of cookies are 'almost impossible to circumvent' (2015: 6), even for those users equipped with tracker blocking technologies such as Ghostery. Similarly, Nikiforakis et al.'s (2013) study of web-based device fingerprinting reveals that commercial data trackers have a range of 'cookieless' methods for identifying and anticipating users that extend beyond traditional cookie aggregation.

This historical development of the web's market model is important to this thesis for two reasons. The first is that this model meant that commercial platforms could embrace the 'publicness' championed by advocates of a 'free' web by providing cost-free services and yet still generating profit by commodifying user data and interactions. It is through this model that a *data-for-services* exchange between user and platform takes place: a user must permit themselves

to be tracked and anticipated if they want to have access to the platform's free services and content. This data-for-services exchange is very much at the heart of today's web economy, as a number of scholars (such as Bassett, 2007; Jordan, 2015; Andrejevic, 2011 and Van Dijck 2009) have suggested and as I will expand on in the next chapter. The second reason why this market model is significant to my research is that current data tracking practices have implications for how users are made sense of by platforms, as I explore in the next section.

Making sense of the data-tracked individual

Like Cohen and Turow, Bolin and Andersson-Swartz (2015) recognise that data tracking has marked a shift from old models of media marketing, which relied on the compiling of audiences or demographics, to a new model in which user identifications and preferences are no longer anchored to traditional models of audience profiling. They state:

> While mass media intelligence was premised on socio-economic census data variables such as age, gender, ethnicity, education and media preference (i.e. categorises recognisable to media users and industry representatives alike), Big Data technologies register consumer choice, geographical position, web movement and behavioural information in complex ways that are too abstract for most lay people to appreciate the full consequences of (2015: 1).

Though their use of 'lay people' is complicated by some of the participant accounts contained in Chapter Four, their analysis provides an explanation of how the data tracked individual comes to be identified, anticipated and made valuable. They argue that contemporary data-mining techniques attempt to capture mass data sets that look not for representational information but for 'pattern recognition' in user behaviour, web movements, geographical movements, consumption habits and other trajectories. They argue that this contemporary data aggregation model thus 'privileges *relational* rather than *demographic* qualities' (2015: 3, my emphasis), and propose then that what was once a matter of 'representation' of audiences 'by definition' becomes a process of abstract 'correlation' (2015: 6). To elaborate:

> In this post-referential situation correlation becomes the main focus. The explanatory dimension of representational statistics (e.g. 'this group of people like this due to their social composition and their habitus privileging certain kinds of action over others') becomes less important than the establishment of correlation between (probable)

> behavioural patterns. The socially explainable 'who' behind this pattern is less important than the algorithmically behavioural 'how' (2015: 5).

To summarise their point then – audience identification is no longer a matter of 'representing' the audience using referents designed to mirror corresponding individuals or groups; instead, identification is now a matter of abstract correlation between users who comprise huge data sets collected under real-time, behavioural, and recursive data tracking strategies. Other scholars have identified similar characteristics to audience identification in data tracking – Jordan notes that user value now derives from correlation between users as nodes in a network (2015), and Stalder and Mayer also note that what was once a matter of knowing audiences is now a process of 'mass individualisation' (2009). Furthermore Ruppert, Law and Savage state that with such data collection methods, the notion of 'knowing' unitary and unique individuals becomes redundant:

> People... are being disassembled into sets of specific transactions or interactions. It may or may not happen that they are reassembled into people (2013: 36).

Essentially then, this model of identification and anticipation no longer cares about *who* you are but *how* your behaviour abstractedly relates to others in the data set. Such models thus very much constitute web users not as individuals and yet not a masses either. In doing so they correspond to Delueze's earlier (1992) theorisation that computational mechanisms work to turn us into 'dividuals'; that is '[w]e no longer find ourselves dealing with the mass/individual pair. Individuals have become "*dividuals",* and masses, samples, data, markets or "*banks*"' (1992: 5).

I will return to the concept of the 'dividual' at various points throughout this thesis. However, to build here on Ruppert, Law and Savage's (2013) argument regarding the reassembling of 'people', Bolin and Andersson Schwarz also make an important point – contemporary data tracking strategies are (by definition) so abstract that data must be *translated back* into the demographic models that marketers have long used to commodify audiences. They state that 'one can observe a felt need among media users and among media industry actors to "translate

back" the algorithmically produced relational statistics in "traditional" social parameters' (1: 2015). As I will explore in Chapter Six, this process is exemplified in Google Ad Settings, wherein user's data trail is translated back into a user profile that lists their gender, age and interests. What I would add to Bolin and Andersson-Schwarz's analysis is that this translating back of data likely also involves explicitly registered data aggregated from users themselves. As such the translating from correlation to representation is perhaps more complicated than they assert. However it is the relationship between correlation and representation that takes the interest of this thesis, as it is this process that opens up space to critically interrogate how identity must be 'done' in contemporary online contexts.

To return to the early theories of net identity then, data tracking marks a shift in the ways in which identity can be articulated, performed and furthermore theorised. The tracking of users for marketing purposes has in some ways foreclosed the possibilities for the potentials of 'doing identity' in cyberspace; what was once only an 'online identity' – fluid, stable or otherwise – has become accompanied by an 'algorithmic identity' (Gillespie, 2014), 'digital shadow' (Cheney-Lippold, 2011) or 'data double' (Lyon, 2014). As Lyon states:

> [Big Data] makes up the data double, Delueze's 'dividual' and that entity then acts back on those with whom the data are associated, informing us who we, are what we should desire, or hope for including who we should become (2014: 7).

I want to stress though that according to Delueze, this dividual is 'serpentine' – that is, it is not simply a 'shadow' in the way that the shadows cast by the sun are fixed absolutely to their corresponding object/ subject. Rather, the serpentine entity that computationally follows and modulates us is 'undulatory, in orbit, in a continuous network' (Delueze, 1992: 6). Whether 'shadow' or 'serpertine', what we can take from Lyon's analysis is that by 'acting on users' dividualisation becomes a critical consideration in how identity might by constituted, and one that takes into account *algorithmic mechanisms* as part of the constitutive process. Before moving on to the ideologies that accompany the contemporary web economy, in the next section I

would like to briefly explore some theories relating to algorithmic identity, especially in regards to performativity.

Algorithmic identity, performativity and networked governance

As Lyon suggests, acts of online identity constitution can be considered performative in the Butlerian sense – that is, online identity 'enacts and produces' the subject that it names (Butler, 1994). Scholars such Bassett (1997), Stone (1995) Jordan (2013) and Cover (2012) examine the performative potentialities of online articulation for user self-expression. For example, describing the personal profiles of users of SNSs, Cover states that 'the establishment and maintenance of a profile is not a representation or biography but performative acts, which constitute the self and stabilise it over time' (2012: 181).

However, as scholars such as Sauter (2013) note, with the increasing emergence of computational identity 'tools', it is not just the user themselves that performs their identity – multiple actants can now be responsible for the creation and maintenance of individual identity. For example, Jarrett notes that the 'database subjects' (2014) created to anticipate individuals intentions do not simply exist in a database, disconnected from the activities of the 'real' identity to which they correspond. Instead these algorithmic identities are *designed* to intersect and interact with the identities of the users that they seek to replicate, and so can be considered actors in the process of identity constitution in that they 'assume a capacity to act upon me and to potentially act against me' (Jarrett, 2014: 25). Gillespie further notes that:

> These shadow bodies persist and proliferate through information systems, and the slippage between the *anticipated user* and *the user herself* that it represents can be either politically problematic, or political productive (2014: 174, my emphasis).

Depending on the context, negotiations and tactics employed by system and user, the slippage Gillespie refers to can be productive or problematic, and at times both and neither, as I will explore throughout this thesis. But here I want to highlight that these systems blur the line

between 'user themselves' and their algorithmic identity; the two become *self-referential* and *co-constitutional.*

This thesis takes the performative potentialities of these 'database subjects' to be a central concern, in that the performative 'entanglements' (Barad, 2007) that connect and produce the anticipated user and the user herself raise a host of critical questions: what does it mean to consider an 'algorithmic identity' – which is constituted primarily by the system, not by the user – as a performative entity? What sort of identity – 'single', 'fluid' or otherwise – can be articulated under a system that attempts to recursively anticipate the user through algorithmic protocols, and personalisation systems? What kinds of negotiations take place between the anticipated user and the user herself, and what are the performative productions of these negotiations?

In this recursive, performative feedback loop between the identity of the user and their 'algorithmic identities', Cheney-Lippold identifies the potential for Foucauldian forms of (bio)power to operate, which can 'work to determine the conditions of possibilities of users' (2011: 173). He writes of the inference involved in algorithmic identification:

> [a]lgorithmic inference works are a mode of control, of processes of identification that structure and regulate our lives online within the context of online marketing and algorithmic categorization (2011: 174).

To turn to earlier theorisations, Agre acknowledges that these restrictive conditions of possibility operate not in online algorithmic identifications but through computational systems in general. Referring to Deluezian theories of control, Agre calls on computational 'grammars of action' that, through a 'capture model' (rather than 'surveillance model', as per Foucauldian models) of socio-technical, governance can determine, regulate and control the horizon of possible actions that web users can take. He writes:

> Once a grammar of action has been imposed on an activity, the discrete units and individual episodes of the activity are more readily identified, verified,

> counted, measured, compared, represented, rearranged, contracted for and evaluated in terms of economic efficiency (1994: 119).

According to Agre, in being more 'readily identified…' these activities are thus put through a process of 'instrumentation that entails the reorganization of existing activities' (1994: 122).

However, it is important to note (as Agre himself recognises) that the regulatory effects of algorithmic personalisation practices should not be taken as a given. Rather, these practices create a *horizon* of possibilities (Gerlitz and Helmond, 2013:1353) – rather than concretised 'conditions' – for the end users implicated in them.[22] By using qualitative and ethnographic methodological approaches, I hope to capture the nuances and complexities of user negotiation that might arise in the horizons created by algorithmic personalisation practices and the users 'entangled' with and within them.

In the final part of this chapter I would like to turn from algorithmic identities to the discourses of neoliberal individualism that have accompanied the development of the 'Web 2.0'. These discourses are important to this thesis because firstly, they support the idea 'You have one identity'; that is, they frame identity as unique, fixable, singular and unitary. Secondly, these discourses champion the individual autonomy that algorithmic personalisation supposedly aids. However, as I argue below, the autonomy supposedly enjoyed by the networked individual is undermined by algorithmic personalisation even as personalisation systems purport to uphold it, thus creating the struggle for autonomy that emerges as a theme in Chapters Four, Five and Six.

Part III

[22] Butler's theory also corresponds to the notion that conditions produced through performative articulation should not be considered completely disciplinary or regulatory. She argues that the performative constitution of identity is not completely determined because it is a repetitive and iterative process – and in being this, it means that the fluidity of discursive construction leaves room for identity to be performed in ways that resist dominant discursive ideologies (1993).

The networked individual and the 'like' economy

As scholars such as Van Djick (2009), Houtman, Koster and Aupers (2013), Jenkins (2006) and Benkler (2006) note, the implementation of 'Web 2.0'[23] in the early 2000s brought with it a fresh set of apparent opportunities for identity construction. Jenkins (2006) and Benkler (2006) amongst many argued that the development of 'Web 2.0' could be popularly and critically celebrated as affording users more opportunity to 'produce' 'prosume' and 'participate' – users can 'upload', 'create', 'share', 'like' and comment on content in a number of different visual, textual and audio formats. In doing so, and crucially in regards to this thesis, Houtman, Koster and Aupers note that popular rhetorics of participatory web championed new possibilities for the exercise of autonomy for users: 'agency, personal autonomy and (inter)active control over media content are at the heart of the new media's participatory culture' (2011: 54).

From this participatory connectivity of 'Web 2.0' and onwards emerge new ways of understanding networks and their users. Rainie and Wellman's 'networked individual' (2014) model for instance describes a situation in which traditional ideas of community ('virtual' or otherwise) based on kinship and collective interest become 'segmented' and 'sparsely knit' (2014: 135) in favour of the 'network' – in which the *individual* – 'not the household, kinship group or work group… is the primary unit of connectivity' (2014: 124). According to Rainie and Wellman, the 'hallmark of networked individualism is that people function more as connected individuals and less as embedded group members' (2014: 12). This move away from 'community' and towards the individual embedded within a network is, according to these

[23] Web 2.0 was widely considered to as the 'next stage' of the World Wide Web. The term refers to 'a combination of a) improved communication between people via social-networking technologies b) improved communication between separate software applications… and c) improved web interfaces that mimic the real-time responsiveness of desktop applications' (MIT, 2014). Though scholars such as Keen (2005) contest that the term is more of an ideology than a set of tangible technological developments, the dawn of web 2.0 was popularly seen as a departure from the text based forms of communication commonly mobilised in Web 1.0. Bassett notes that '2.0' is understood by Tom O'Reilly, who framed the term, as a technical and business corrective to the shortcomings of the early Internet' (2008: np). Bassett considers O'Reilly's framing as 'based on an understanding of the dynamics of the system (the new media ecology) in *use*' (2008: np), and problematises the industrial/ practical affordances of Web 2.0, but also its 'cultural stakes' in order to consider the 'participatory dynamics of the media system as a whole' (2008: np).

writers, to be largely embraced – under this model, individuals are freed from the ties of traditional, institutional bonds (such as the neighbourhood), and through their own hard work can become the agents of their own networked success.[24] Again crucially in terms of this thesis, the networked individual enjoys the *autonomy* of establishing their own individualised web experience – under networked individualism, 'each persona also creates their own internet experience, tailored to her needs' (Rainie and Wellman, 2012: 12).

These tropes are reflected in popular discourse surrounding 'participatory culture' and web 2.0 – for example, *Time* named 'The Person of the Year' in 2006 to be 'You' – celebrating not just the participatory nature of this new creative environment, but also the individualism fostered by that environment. This contemporary ideology of networked individualism does not exist in a vacuum, as Houtman, Koster and Auper suggests, this idea of the self corresponds to discourses of late-capitalist individualism (2011); discourses that, as aforementioned, scholars such as Giddens (1991) and Rose (1991) have also critiqued. In relation to autonomy, post-feminist critiques in particular have sought to describe and critique modes of subjectivity constituted by late-capitalist markets. As Ringrose and Walkerdine (2008), Probyn (1993), Jing (2006) and Tudor (2012) note, the neoliberal subject is constructed as an autonomous individual who is expected to be an 'agent of their own success' (Ringrose and Walkerdine, 2008: 227). This autonomous subject is supposedly empowered not only by their productive capabilities (as with industrial socio-economic systems) but also by their consumption choices – they are free to choose what they like, when they like without suffering the interventions of the state or other socio-economic institutions. However these theorists point out that the promises of individualism are often revealed as ideologies through the lived experience of

[24] That is not say online communities do not exists at all – subcultures such as B3ta.com (self described as a 'puerile digital arts community') certainly suggest that some sites still retain an ethos of community – and poignantly in the case of B3ta, do not track their users (if Ghostery is to be believed). I explore the mobilisation of terms such as 'community' and 'commonality' by SNSs in further detail in 'Giving the Viewser A Voice' (Kant, 2014), wherein I look at the dual deployment of both 'individualism' and 'community' by sites such as Facebook in the name of personalisation.

individuals – the social structures of late capitalism mean that one's success is very much engrained in socio-economic structural hierarchies which uphold dominant class and power dynamics. My own research makes it ever more apparent that the ideologies embedded in algorithmic personalisation do not always correspond to the lived complexities of users' socio-culturally embedded experiences. However, it is the ideologies of autonomous individualism that I want to emphasise here, since it is these ideologies which underpin contemporary algorithmic personalisation practices, even as such practices seek to undermine individual autonomy, as I will shortly explore.

The discourses of networked individualism fostered by the contemporary web have led scholars such as Marwick (2014), Van Djick (2006) and Bodle (2015) to argue that such discourses seek to fix, stabilise and unify user identities in order to efficiently commoditise them. For example, Marwick notes, 'the move to commercial social software such as social network sites, blogs, and media-sharing services has brought with it an impetus to adhere to a fixed, single identity' (2014: 272). These arguments are certainly reinforced by the 'real name policies' enforced by platforms such as Facebook and Google – who insist that users log on with their 'real' names when using these platform's services. Furthermore, Zuckerberg's claim that 'you have one identity' (cited in Van Dijck, 2013) that could and should be articulated on Facebook seems to uphold a similar ideal – we should adhere to a unitary self that corresponds to an 'authentic' identification of ourselves, our tastes, preferences, habits and interests.

This notion that we have 'one identity' had been problematised not only by Marwick and Van Djick themselves but by theorists such as Butler (1990, 1993), Stone (1995), Bassett (2007) and Cover (2012), as I have explored. Participants' testimonies in the following chapters also suggests that identity cannot be so easily fixed and unified. More than this though, if we consider Bolin and Andersson-Swartz's (2015) analysis as well as theories by Jordan (2015) and Ruppert, Law and Savage (2013), I would argue that the 'one identity' argument is also

problematised by the contemporary model of user dividuation *in itself*. That is, the correlational, population-size, continuous-time, cross-platform and recursive nature of contemporary commercial data tracking *does not only* seek to fix the identities of specific individuals. Instead, commercial data tracking is premised on the idea that individual can be endlessly expressive and recursively worked on across platforms – if this were not the case, then the ubiquitous real-time data tracking would not be necessary. For example, once the platform 'knew' the preferences, tastes and demographics of an individual, 'knowing' the user and therefore the matter of identifying and anticipating them would be settled. But in actuality, the tracking of users by commercial platforms is continuous, and is intentionally open to recursion, inference and influence (as exemplified by Facebook's 'My Ad Preferences' cited in the Introduction Chapter). This suggests to me that these mechanisms *do not only seek* to make fixable identity, but to also to *rework identity* in a process of continuous, correlationary, real-time flux.

The struggle for autonomy between user and system

In this final section of this chapter I want to briefly critique the role that autonomous-decision making plays in algorithmic personalisation. A number of scholars (such as Bodle, 2015; Turow, 2011; Bassett, 2007; McStay, 2012 and Peacock, 2014) note that commercial data tracking poses a threat to user autonomy. For example, Bodle states:

> Although Facebook provides real time insights to advertisers and brands to stimulate engagement, the company does not provide the same to members, revealing an important power differential. Access and control of one's own data is an integral component of autonomy and without it self-determination is relinquished (2015: 137).

Here Bodle suggests that algorithmic personalisation limits autonomous capacity because users have limited access to and control of their own data. Though I agree with this (and will return to similar arguments in Chapter Four), I propose that algorithmic personalisation is inextricably linked to user autonomy not simply through data tracking but in its very principle to 'aid' decision-making. That is, in purporting to 'aid' the user by acting on their behalf, algorithmic

personalisation practices actually create a displacement of individual autonomy that works to *undermine* the subject even as they claim to empower the subject.

To elaborate, as was established at the beginning of this chapter, algorithmic personalisation practices involve a shift in control of decision-making processes to the system, rather than the user (Sundar and Marathe, 2010). Hallinan and Striphas stress that these algorithmic systems involve a new form of autonomous decision-making – focusing on Netflix, they state that these recommendation systems 'render algorithmic information processing systems legible as forms of cultural decision making' (2014: 119). Their analysis helps to highlight that these algorithmic recommendation systems, which are purported to aid user's autonomous capacities, actually render cultural decision-making over to the system. It can be argued then that in 'assisting' users' autonomous decision-making, algorithmic personalisation actually works to *undermine* components of a user's autonomy even as it aids it. After all; the idea of asking the algorithmic system to act autonomously on your behalf is in some ways a paradox – the system cannot act autonomously for the user-as-agent without becoming an autonomous agent itself.

It is these autonomous attributes of algorithmic personalisation that open up critical considerations in regards to the decision-making processes that are at times 'given over' to the system in the name of personalised convenience. I propose that the autonomous capacities of algorithmic create not just convenient 'personal relevance' but also *a struggle for autonomy between user and system*. I will return to this struggle at various points throughout this thesis but especially in Chapter Five, where the autonomous capacities of Facebook's autoposting apps actually work to *undermine and disrupt* participants' self-performance on Facebook. I conclude this chapter then by stressing that the contemporary data-tracked individual is not just anticipated and acted on, but also acted *for* by algorithmic personalisation in ways that create space for negotiation between user and system in regards to knowledge production, control, (the struggle for) autonomy and identity articulation.

Chapter Three

Methodological approach and design

> *It is easy to theorize, but substantially more difficult to document how users may shift their worldviews to accommodate the underlying logics and implicit presumptions of the algorithms they use regularly*
>
> (Gillespie, 2014: 187).

Introduction: bridging the gap

This chapter seeks to make transparent the methodological framework I have developed for exploring the relationships manifest between algorithmic personalisation practices and the users who negotiate, engage with and understand such practices. As explained in the previous chapter, these explorations are informed by the works of scholars such as Gillespie (2014), Agre (1994), Jarrett (2014), Gerlitz and Helmond (2013) and Cheney-Lippold (2011), who propose that algorithmic processes which seek to 'know' and 'anticipate' users create 'horizons of possibility' for the users who are anticipated; conditions which, as I have sought to assert, have critical significance for those who encounter algorithmic personalisation practices in relation to their autonomy, control, epistemic knowledge production and identity.

With these assertions in mind I want to highlight Gillespie's above statement that it is 'easy to theorize but substantially more difficult to document' the ways in which computational logics shape the worldviews of users themselves. Such a statement begs the question: how can one go about 'documenting' the theorised 'horizons of possibility' created by contemporary algorithmic personalisation practices and experienced by users of those practices? As established, this thesis looks to make its central contribution to research regarding algorithmic personalisation practices by trying to bridge the gap between 'theorizing' and 'documenting' by engaging with the users themselves. This chapter outlines *how* I acknowledge, approach and

bridge this gap, and explores some of the methodological considerations that have arisen throughout the design and implementation of my research.

I will consider how qualitative analysis might be used to research notions of the 'everyday' and of 'lived experience', as well as explore some of the methodological and ethical implications of engaging with human subjects as a researcher who is also always-already an invested subject. I will then outline how I use political economy and critical analysis to inform and underpin my qualitative research. Finally I will acknowledge another methodological consideration pertinent to this thesis: namely, the implications of studying the effects of 'Big Data' without utilising big data methods themselves.

Three sites of investigation

At present, the examples of personalisation that could potentially fall within the remit of this thesis exist in innumerable manifestations all over the web – and beyond, to web-supported technologies and even 'smart' hardware such as household appliances that use user-generated data to inform algorithmically personalised functions. Clearly attempting to analyse the engagements, experiences and responses of all individual users to *all* technologies that in some way incorporate algorithmic personalisation would stretch the resources available to this doctoral project far beyond their limits. Instead I have chosen three specific instances of algorithmic personalisation as a basis for my research, which I believe share enough similarities to algorithmic personalisation as market-driven principle, but which also differ enough to allow me to explore how different contexts create specific horizons of possibility for the individuals that encounter them. By considering specific sites, it is possible also to consider political economic, social and user-orientated conditions that such horizons might incorporate.

The three sites of investigation chosen for this thesis are: tracker blocker tool Ghostery, where the focus is on exploring personalisation and privacy, Facebook's autoposting apps and the

moments of identity disruption for users of apps, and the 'predictive powers' of Google Now in relation to the lived trajectories of those who engage with the app. While the following chapters outline in far more detail the ways in which each of these sites relate to this thesis, I would here like to explain briefly some of the motivations for choosing these sites.

Ghostery and its users were chosen for investigation because the tracker blocker's relation to personalisation is two-fold. Firstly, as an online privacy tool this tracker blocker *renders transparent* the extensive third party data-tracking practices on which many algorithmic personalisation practices rely, and therefore presents a valuable opportunity to explore the lived experiences, accounts and negotiations of web users who for a variety of reasons, resist being tracked by data trackers. Secondly, Ghostery offers users a chance to *personalise their use of the tool* by allowing a high degree of choice regarding which trackers are blocked and on what sites. Ghostery is therefore in itself an example of user-initiated customisation. Thus, Ghostery accommodates the study of individuals' engagement with practices such as data mining, personalised advertising, control through customisation and user anticipation. In doing so it allows for the exploration of critical implications of algorithmic personalisation in relation to user agency, privacy, identity and epistemic uncertainty.

Facebook's autoposting apps were chosen as a site of investigation because autoposts mark a moment of interaction between user and system wherein the system not only makes decision on behalf of the user but also quite literally *acts* on behalf of that user. As I detail in Chapter Five, autoposts by third party apps on Facebook (where an app automatically posts to a user's Facebook audience a status update on behalf of a user) represent a somewhat crude example of algorithmic personalisation in that although only the user's name and profile picture is mined in this action, in autoposting a user's 'algorithmic identity' performs an identity articulation *in the user's stead.* In doing so autoposts create the possibility for the struggle for autonomy between user and system; a key theoretical implication of algorithmic personalisation that, as outlined in

Chapter Two, is one of the focuses of this thesis. In exploring individuals' engagement with Facebook app autoposts, the chapter looks to critically scrutinise themes such as identity performance, control and algorithmic governance.

Finally, Google Now was chosen because it exemplifies most explicitly algorithmic personalisation by attempting to algorithmically deliver the information 'you need throughout your day, before you even ask' (Google Now, 2014). In doing so, Google Now facilitates the exploration of user engagement with *pre-emptive personalisation strategies* that not only attempt to build a comprehensive 'algorithmic identity' of the user but actually use that identity to shape a user's every day trajectory and socio-cultural interactions. The predictive promises of Google Now therefore open up a space to explore participant negotiations with a personalisation technology that are undertaken not through a framework of resistance (as with Ghostery) or identity performance (as with autoposts) but with personalisation in the name of cost-free 'convenience'. Thus, notions of user trust, expectation and (mysterious) technological failure are here interrogated.

Qualitative methods and everyday life

As stated this thesis looks to critically engage with users' lived experiences of algorithmic personalisation within the context of users' everyday lives. Research that looks to engage with the everyday lives of individuals enjoys a long tradition in Media and Cultural Studies. For example Williams ([1958] 2001) emphasised that it is the 'ordinariness' of daily experience that creates and facilitates the 'common meanings' (Williams, [1958] 2001: 11) that individuals use to make sense of the world. De Certeau ([1984] 2002) sought to consider 'everyday interactions' in order to 'bring to light the clandestine forms taken by the dispersed, tactical and makeshift groups or individuals' ([1984] 2002: xvii) and in doing so interrogate the complex power relations between agencies/ collectives/ individuals, and institutions/ structures. Silverstone argues that it is the socio-cultural structures responsible for creating the

complexities of meaning-making in everyday life that 'become the site for, and the product of working out significance' (1994: 184). My thesis aligns with this research in that it looks to explore the socio-cultural 'significance' of algorithmic personalisation as a practice that structures, manages and potentially governs some components of everyday experience. My work also aligns with the qualitative and ethnographic research undertaken by internet scholars such as Bakardjieva (2003), Livingstone (2008), Best and Tozer (2012) and Kennedy (2015) who use methods such as qualitative interviewing, participant observation and 'technology tours' (Kennedy, 2015) to understand how users incorporate the use of online and digital technologies into their daily and domestic routines. As such the next section outlines some of the work on research methodologies that have informed my own approaches.

Qualitative interviewing and ethnographic underpinnings

As Warren recognises, 'qualitative interviewing has long been linked to ethnographic fieldwork, a traditional staple of anthropological research' (2001: 85). As I will explore, though my research can be considered more qualitative than ethnographic, Warren's statement highlights the importance of briefly acknowledging the role of ethnography in my work.

As a methodology, ethnography and ethnographically-informed approaches have been established in anthropology, social sciences and cultural studies for many decades (McNeill and Chapman, 1989; Geertz, [1973] 1993). Scholars such as Warren (2001), McNeill and Chapman (1989) and Boellstorff (2008) have noted that as a methodology ethnography involves the in-depth, interpretative study of how meaning is constructed and maintained by social subjects in community environments and in apparently mundane 'every day' contexts. By observing the seemingly natural, 'common sense' utterings and communications of social subjects, as well as recording the seemingly anecdotal testimonies of individuals situated within a culture, the ethnographer's task is to apply 'methods attuned to the banal dimensions of human life' (Boellstorff, 2008: 72) in order to create 'thick description' (Geertz, 1993); that is, to 'draw out

large conclusions from small, but very densely textured facts; to support broad assertions about the role of culture in the construction of collective life by engaging them exactly with complex specifics' (Geertz, 1993: 28).

In a strict anthropological sense, the extent to which my research is ethnographic can be questioned – my work does not really involve 'fieldwork' or longitudinal participant observation on a particular site or sites,[25] nor does it look to observe detailed social interactions in a specific community. Instead, my work looks in detail at *moments* of lived experience, and looks to explore specific *themes* related to algorithmic personalisation practices. As Warren notes, 'researchers often choose qualitative interviews over ethnographic methods when their topics of interest do not enter particular settings but their concern is with establishing common patterns or themes between particular types of respondents' (2001: 85). For example, although Facebook constitutes a virtual ethnographic field site[26] and although net ethnographies have increasingly challenged the idea that ethnographies have to be 'located' at all (Wittel, 2000), I believe my investigations into user engagements with Facebook's autoposting apps would not have been more fruitful if I had used traditional ethnographic methods. This is because instances of autoposting are so few and far between that ethnographic observations of Facebook app user interactions would have produced no more relevant data than interviews. However, since 'ethnography's lens is that of lived experience' (Warren, 2001: 87), I believe that researching even these ephemeral moments can be considered in some sense ethnographic; after all, as I explain in Chapter Five, such moments constitute a moment of identity slippage and negotiation that can only be reached through the lived experience of users themselves.

[25] As Marcus (1995) and Falzon (2009) argue, cross-site ethnographies are possible and are useful for 'the study of a social phenomenon that cannot be accounted for by focusing on a single site' (Falzon, 2009: 1). However as my investigations do not look at social interactions *between* individuals on any physical site, but rather the data tracked *individual* in different moments of personalisation, I do not believe that site-based methodologies (multi- or single) particularly suit my research aims.

[26] See Koosel (2014) for work on Virtual Ethnographies on Facebook. Hine's seminal work on Virtual Ethnography (2000, 2015) provides a robust overview of how ethnography might be conducted online and on social networks.

My role as researcher

All three investigations used interviews and focus groups as the primary method of data collection. In using these methods, I looked to interact with users who encounter algorithmic personalisation at an 'experiential level' (Maynard, 1994: 16) and in doing engage in a form of knowledge production that looks to 'unveil the distinctive meaning-making actions of interview participants' (Warren, 2001: 86).

However in using qualitative methods to attempt to 'unveil' so-called 'meaning-making actions', some pressing methodological questions arise. Firstly, in 'asking questions and getting answers' (Boellstorff 2008: 34), are qualitative researchers really simply 'uncovering' some sort of hidden or inherent meaning from participant responses? As feminist approaches to qualitative methods have emphasised (Cotterill, 1992; Maynard, 1994; Stanley & Wise, 1990; Haraway, 1992) and as Warren herself notes, all research is always-already embedded, 'situated' (Haraway, 1992) and informed not only by a researcher's academic interests, but also by their own gendered, classed and raced (amongst other socio-cultural identity markers) subjectivities. Therefore the quest to find meaning in participant encounters must be reflexively – or to use Barad's terminology 'diffractively' (2007)[27] – addressed as something not just created and shaped by the *participant* but by the *researcher*.

As Cotterill (1992) and Maynard (1994) recognise, analysing qualitative data is a complex task that must try to respectfully acknowledge the validity of the experiences reported by respondents whilst also accepting that 'an emphasis on experience is not however, unproblematic' (Maynard, 1994: 15). As Maynard states, 'to begin with there is no such thing as

[27] Barad (2007) and Haraway (1992) use the term 'diffraction' rather than 'reflection' in relation to methodological approaches to knowledge production. Barad argues that 'for all of the recent emphasis on reflexivity as a critical methods of self-positioning it remains caught up in geometries of sameness; by contrast, diffractions are attuned to differences – differences that our knowledge-making practices make and the effects they have on the world' (2007: 72). I believe that for the purposes of this methods chapter both of these terminologies, despite their nuanced differences, sufficiently emphasise that the role of the researcher does not lie outside the meaning-making process.

"raw experience"…. the very act of speaking about experience is to culturally and discursively constitute it' (1994: 15). Thus, engaging with the 'lived experiences' of participants is always an act of also constructing that experience, of framing participant accounts and testimonies through a framework informed by the researcher's own research goals, cultural context and theoretical underpinnings. However, as Maynard argues, it is this very framework that allows the researcher to 'go beyond citing experience in order to make connections which may not be visible from the purely experiential level alone' (1994: 23/24). In the case of my own research, this assertion seems very apt; I am attempting to situate the everyday engagements of users who encounter algorithmic personalisation within a theoretical framework informed by my status as a Media and Cultural Studies researcher and within a wider critical and political economic context.

However this does not by any means suggest that researchers should not 'take [participant] experience seriously' (Maynard, 1994: 58); as Cotterill notes, it is the researcher's responsibility to allow participants to 'speak about themselves' (1992: 40). In an attempt to do so I tried to ensure that participants had a clear idea of how their words would be used in my research, as well as ensuring all participants were given time to ask any questions they had about my research. All participants were given information sheets and consent forms prior to the interviews (see Appendix B) and I have invited participants to see excerpts of any work that is being published in which their responses are featured. Taking participant experience seriously is not just a matter of transparency however – it is also a matter of how data is gathered and made sense of. With this in mind, interview questions were informed by and designed to answer my research questions, but also be semi-structured in a way to allow participants to respond as open endedly as possible (see Appendix C). Interview responses were then reviewed and re-reviewed a number of times to identify themes and strands that emerged from and in response to interview questions (themes such as user control over data, self-expression on Facebook, knowledge of personalisation practices – these themes are explored in the following

chapters and are specific to each study). In drawing on these this I was eager to allow for a range of different responses but also acknowledge responses that did not necessarily fit recurrent themes across interviews, and yet still merited critical attention. Ultimately it seems important to note, as Kvale and Brinkman do, that 'the research interview is not a conversation between equal partners, because the researcher defines and controls the situation' (2009: 6). Thus, I hope to do justice to participants' accounts whilst contextualising their responses within my own critical framework.

It seems pertinent to also briefly acknowledge that the relationship between participant and research is not universally applicable to all interviewees and across all scenarios; a huge number of factors – even things such as interview location, as Sin (2003) points out – can affect the research-interviewee dynamic, and Cotterill (1992) states that such changeable dynamics mean the researcher does not necessarily always enjoy more authority than the participant during an interview. To draw on my own research experiences, many of the Ghostery interviewees' technical knowledge of data tracking far outstripped my own, highlighting that the researcher is not always more knowledgeable on the research subject than the participant. Conversely, in the Google Now interviews I felt very aware of the authority bestowed on me as a researcher; in this case the participants were first year undergraduate students who (understandably given that I had delivered a lecture to them as part of my call for research participants) recognised me as a tutor, and therefore looked to me to 'teach' and 'lead' them. I explore this further in the subsequent chapters, but here I want to emphasise that qualitative research is filled with considerations such as these, which should be at least acknowledged and accounted for even if they cannot be completely resolved.

Another methodological consideration that comes with attempting to analyse 'meaning-making actions' through interview methods is that this approach seems to work on the assumption that 'people are able to articulate the various aspects of the various culture that shape their thinking'

(Boellstorff, 2008: 68). Boellstorff argues that 'like language, many aspects of culture are only imperfectly available for conscious reflection' (2008:167), thus suggesting that some participant engagements that may be important to the researcher will be left unarticulated by the respondent.

This is particularly pertinent to this thesis if we consider Fan and Poole's statement that 'the concept of personalisation is slippery yet intuitive' (2011: 183). The slipperiness of personalisation became apparent in my investigations – for example, on its website and other marketing platforms Ghostery rarely if ever frames data tracking as a matter of personalisation. By extension, it was at times difficult to bring up personalisation as a topic worthy of debate with some Ghostery participants, who, in keeping with Ghostery's discourse and wider public debates on data tracking, framed their use of Ghostery as a matter of privacy.[28] Furthermore, in other interviews, participants were unaware that third parties were tracking their data on Facebook, thus supporting boyd and Crawford's claim that, 'many social media users are not aware of the multiplicity of agents and algorithms currently gathering and storing data for future use' (2011: 11), which added another barrier to the articulation of their engagements with personalisation practices. This was compounded by the black-boxing techniques that commercial enterprises employ to 'protect' user data – as I explore below and in Chapter Four.

However, the fact that at times participant articulations regarding personalisation were limited transpired to be a valuable insight in itself; for example, some Ghostery users interviewed strongly articulated that they wanted to protect their online privacy – yet simultaneously said they enjoyed consuming algorithmically personalised content; other participants displayed a great deal of awareness and expertise of data tracking, yet reported that they could never know the true extent of who was tracking them, when and how, as I detail in Chapter Four.

[28] I want to stress that participants not seeing Ghostery as a matter of personalisation does not mean they did not 'understand' the tracker blocking process – after all, public debates on data tracking often revolve around the subject of privacy, and it is I as a researcher who is bringing personalisation to the table.

Participant recruitment

In total, this thesis draws on the accounts of thirty-four interview participants[29] – twelve for the Ghostery project, sixteen for the Facebook project and six for the Google Now project. As my three investigations sought to map different engagements with different algorithmic personalisation practices, my recruitment methods varied from study to study, and were complicated by some practical and methodological implications.

For the Ghostery study, participants were primarily recruited through the Ghostery blog – after a preliminary call for participants via my own Twitter account, Ghostery picked up on the tweet and replied, saying that 'they might be able to help me out'. I found this offer both relieving and disconcerting – I had chosen to study Ghostery partly because it is a commercially profitable tracker blocker for users and 'privacy compliance company' for data trackers themselves, and therefore open to political economic critique. I was therefore apprehensive that accepting their help with participant recruitment might lead to a demand for data or findings in exchange. However, after careful deliberation and upon clarification that Ghostery did not in fact want any part in the research process or ask for any findings, I accepted their offer. Upon reflection, I am glad I did; as Arksey and Knight note, one of the problems with doing qualitative research is 'not being able to find anyone to talk to' (cited in Warren, 2001: 87). I encountered this problem in recruiting for all three investigations, and it

[29] At least four more people participated in an interview for this thesis, but these interviews were not formally incorporated into the research for a variety of reasons – one interviewee was discounted from the Google Now study as they only attended one of four interview sessions, while a Ghostery interview was similarly discounted as it transpired that the interviewee did not actually use the add-on, but rather had a general interest in online privacy. The other two interviewees were interviewed for their technical knowledge of personalisation practices (on Facebook and *The Guardian)* but these were treated a pilot interviews as they provided general knowledge on data tracking/ personalised marketing rather than their everyday engagements with personalisation. Furthermore, around fifty other people took part in initial surveys (for the Google Now and Facebook autoposting apps projects) but as requests for follow-up interviews were not successful this data was also discounted – I felt that that data gleaned from these surveys was never quantitatively broad nor qualitatively deep enough to be considered sufficiently robust for analysis.

transpired that the Ghostery blog was a very successful way of finding participants – with eight out of twelve participants recruited through the blog.[30]

In response to Arksey and Knight's assertion that participant recruitment can be an issue, Warren states that 'this can be a problem when the topic of the interview is stigmatising or when the occurrence of needed respondents is rare in population' (2001: 87). Although undoubtedly an issue in some research, in the Facebook apps study I found I had problems recruiting for the opposite reasons – using Facebook apps appeared to be so widely-spread and normalised that my call for research participants generated very little interest. For example, I attempted at first to recruit participants via public social media platforms – I set up a research blog on Wordpress, created a public 'Plugged-In Profiles' page on Facebook, and tweeted calls for participants using Facebook, Instagram, Candy Crush and other app hashtags. I also posted calls for participants on popular news stories on online identity, apps and privacy that I hoped would appeal to some people interested in talking about their app use. Despite this promotion, I garnered very little interest on any site external to Facebook. Instead by far the most successful form of recruitment transpired to be 'snowball sampling' (Browne, 2005; Skeggs et al., 2008) via my own social network – in the end I gained sixteen participants through the 'sharing' of my call for participants via my friends, and friends-of-my-friends. As Browne (2005) notes, snowballing can sometimes lead to 'sameness' in participants (as acknowledged in Chapter Five) – however, snowballing became the most viable option.

For the final investigation – which analysed Google Now – participants were recruited from a first year undergraduate Digital Media Studies course. Participants were chosen from this

[30] The other participants were recruited through 'snowball sampling' (Browne, 2005) my own social network, and through recruitment through Brighton-based privacy events such as 'Cryptoparties'. I decided to use this method as I felt that only interviewing individuals who responded to the blog call might mean that respondents would be essentially 'fans' of Ghostery, whereas I wanted to try and capture the experiences of those who were not as engaged with Ghostery so as to follow their blog. This proved valuable – for example Chris and Claire, who were both recruited outside of the blog, offered some interesting, perhaps more cynical views on the tracker blocker than some of the other participants.

course as this investigation sought to engage with individual who *did not* necessarily identify as users of this particular personalisation technology. I go into more detail in Chapter Six, but as with the other two studies participant recruitment was difficult and in the end I recruited six participants. In contrast to the other studies, participants were offered the chance to win one of two £50 gift vouchers for their participation. Such incentives are commonly used in the social sciences and psychology and although Cobanoglu & Cobanoglu (2003) highlight that using prize incentives should be approached with caution in regards to research bias, in this case I felt it was important to offer an incentive, because a) I was asking for a considerable amount of participants' time and effort and b) as disengaged users, their participation in the study was not motivated by their use of the technology (as it might have been with Ghostery or Facebook), and therefore asking them to give up so much time without the opportunity of a reward seemed to me to be unfair.

The participants: ethics and privacy

As a project involving human subjects, my doctoral research was granted ethical approval by the C-REC for Social Sciences/Arts Ethics Review Board at the University of Sussex. As part of the board's recommendations, all participants were aged eighteen or over, and, after reading participant information sheets (see appendix), all granted written consent for their interview responses to be used in the project. In addition all participants were told that they were free to withdraw from the project at any time, with the understanding that some materials may at some point be published.

Israel and Hay recognise that the researcher has a responsibility to 'guard a confidence' (2006: 78) when it comes to asking respondents to speak about a topic, especially ones that are sensitive.[31] Such considerations apply to my own research: for example, through their very use

[31] Israel and Hay note that their may be times when offering participant confidentiality is inappropriate – for example for participants 'who are in public office or involved in public work' (2006: 78).

of Ghostery, it can be safely assumed that most Ghostery users care about their privacy. Therefore it seemed very important to ensure I respected their privacy concerns and not disclose any information that could be used to identify the participants. Similarly in the Facebook autoposting project, some instances of autoposting involved the disclosure of sexually suggestive materials or content that participants saw as 'embarrassing', and so treating participant responses with confidentiality was again very important. Even when participant responses do not seem especially controversial, as the Ethics Committee of the AoIR highlight, 'individual and cultural definitions of privacy are ambiguous, constant and changing' (2012: 15). As such even though at the time of the interview some topics were not perceived by participants as sensitive, all participant responses are anonymised, and so all participant names featured throughout this thesis are pseudonyms. However, in a bid to try and afford the participants some autonomy and self-recognition in this process, participants were given the option to self-select pseudonyms if they so preferred.[32]

Participant identities: demographics-based analysis

As Warren and Maynard highlight, no participant response exists in a vacuum – 'people's accounts of their lives are culturally embedded' (Maynard, 1994: 23) and 'the respondent is… raced, classed and gendered as well as being situated in the present moment' (Warren, 2001: 40). As such, like all respondents the participants of this research can be considered to be social subjects whose social identities have a part to play in their responses to my questions. Furthermore identity categories such as gender and age influence how an individual is 'anticipated' as part of algorithmic personalisation processes – for example Google's and Facebook's personalised advertising strategies both take age and gender into account when displaying 'recommended' content to users. It seemed important therefore to try to recognise

[32] Even the self-selection of pseudonyms can potentially pose a confidentiality breach – for example if participants chose to use a unique 'username' than they commonly use online, this could potentially lead to them being identified. However, all self-selected pseudonyms in this thesis have been checked to ensure that this is not the case.

participants as social subjects; by myself, by others and by the personalisation algorithms that look to anticipate them.

However, as Skeggs et al. note, gathering and taking into account social categories such as gender, race and class in research design can be problematic – for example, asking a participant to self-define their class can make the respondent feel 'morally judged' (2008: 8) and therefore lead to inconsistencies in class-based analyses. Furthermore, Warren notes that asking respondents too many personal questions can make the participant so uncomfortable that they withdraw from the research all together (2001). The latter consideration was especially pertinent to the Ghostery project as I was very conscious that asking people who were concerned about their privacy for too much demographic data would be at best counter-productive and at worst hypocritical. As such, I only asked participants to confirm their gender and provide occupation and country of residence, if they felt comfortable. Some did not feel comfortable giving me this information, such as the self-named 'Participant', who declined to volunteer any demographic data about themselves. Despite – indeed, because of – this lack of demographic information I believe that Participant's answers remain valuable; the fact that they did not want to give me any personal data indicates their position as someone unwilling – in *all* circumstances – to function as a 'data provider' (Van Djick, 2009).

For the Google Now and Facebook project participants, in addition to the above demographic data I also asked them for their age. Such data did at times prove valuable – for example, gathering some demographic data was important for the Google Now study, as it proved that Google Now got the gender of the participants 'right' and therefore opened up space for discussion about how the participants felt about being 'known' by the algorithm. Furthermore, as Morley recognises, occupation can potentially be a signifier of class (cited in Skeggs et al. 2008), which may play a part in the taste performances explored in the Chapter Five;

occupations (where provided) also add to the richness of the data in the Ghostery study, as occupation may contribute to how 'expertise' functions in being a data-tracked subject.

Here however I want to make a very important point: the accounts of my participants do not reflect the plethora of possible identities that might encounter these algorithmic personalisation practices, nor do my analyses look to make claims about how participants' social categories effect their use of personalisation technologies. For example, my research only gathered information from English-speaking participants, who were largely based in the UK (with some in the US, Netherlands and France), and so I want to acknowledge this thesis does not include analyses drawn from anyone outside of these dominant language and nation-state boundaries. I hope however that future research can base itself in other linguistic and national socio-cultural contexts, not to 'speak for' those languages and countries (my analysis does not 'speak for' the UK's, Netherland's or France's web users) but to add to a field of research already dominated by Anglo-centric studies. To further exemplify: this thesis does not make claims that female-identifying participants negotiate personalisation practices in particular ways *because* they are gendered as female. Though I think such notions could be explored, for this thesis to make such claims I would require a different theoretical framework (for example one that draws on explicitly feminist theoretical body of literature) and by extension be directed by different research questions, and by further extension produce different data sets. As algorithmic personalisation practices continue to develop, the opportunities to pursue such avenues are becoming more and more apparent, and so I hope however that future projects into algorithmic personalisation do mobilise such frameworks.[33]

[33] For example, in the final three months of my doctoral research, when surfing YouTube I have been repeatedly bombarded with adverts for 'Clear Blue' fertility tests. The epistemic uncertainties inherent in algorithmic personalisation mean I cannot know for sure that these ads are delivered to me because I identify as female and am 30 years old, yet the frequency of the ads suggest that Google assumes that fertility tests are 'personally relevant' to me at this time. YouTube's personalised advertising strategy here exemplifies that though such inferences are deeply apersonal and can be strikingly incorrect (I am not in fact, interested in fertility tests right now), the categorisation of my subjectivity as gendered and aged has a potentially profound effect on the ways and means in which I am anticipated and acted on by Google's personalisation algorithms. It seems that algorithmic personalisation might doubly entail 'women's work' (Jarrett, 2013: 14) – wherein the domestic, reproductive and

Instead, the research here attempts to explore participants' accounts that are always-already situated within socio-cultural normative tastes and practices – practices that are specific to their lived experiences and are therefore contingent on context-specific parameters of taste, class and cultural preference (amongst other factors). That is, in my analysis 'there is no attempt to claim an ability to generalize to a specific population, but instead the findings are relevant from the perspective of the user of the findings' (Bailey cited in Rudestam & Newston, 2007: 106). Thus, participant responses that inform this thesis should not be taken as representative of Ghostery, Google Now, or Facebook users as a whole – rather their testimonies are explored here to highlight the ways in which algorithmic personalisation intervenes in identity performances, negotiations and socio-cultural practices that are always-already embedded in pre-existing frameworks of socio-cultural and economic norms, negotiations and practices.

Political economy

As Chapter Two explored, the wide-spread implementation of algorithmic personalisation practices across many contemporary web platforms is motivated by business logics and revenue generation: many free-to-use platforms look to anticipate their users in some way in order to make their sites profitable. As such, it is important to acknowledge that web users are situated within a framework that positions them as 'data providers' (Van Djick, 2009) in wider set of socio-economic relations. A political economy is useful as a methodological approach for this research because as Murdock and Golding (2005), Martellart and Martellart (1998) Greenstein & Esterhuyan (2006) and Bettig (1996) emphasise, political economy is useful for identifying the 'underlying social relations' between market logics and individual needs and interactions (Greenstein and Esterhuyan, 2006: 15).

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affective labour traditionally performed by women has tangible, explicit exchange value as affective digital consumer labour. Again, though I feel this is a valuable avenue for further research, this thesis has not taken up a framework that examines gender specifically for a number of reasons, one of the most pressing being that these clearly gendered ads were not nearly as prevalent in the time I was designing my fieldwork and critical questions (2012-2014) as they are today.

Political economy interrogates the 'wider structures that envelop and shape everyday action' (Murdock and Golding, 2005: 61), and in doing so it is useful for situating the responses of users of everyday technologies within a macrocosmic set of social practices. By acknowledging these macrocosmic frameworks, it becomes possible to consider how economic drives to algorithmically personalise user experience might intersect with user engagements, negotiations and entanglements at the level of everyday lived experience.

Furthermore, political economy approaches allow for a framework that considers how neoliberal ideologies of individualism explored in Chapter Two intersect with the monetisation strategies employed by commercial platform providers. By considering algorithmic personalisation as a) market-driven practice and b) underpinned by ideologies of individualism (even as it works to 'dividuate' users), it becomes possible to formulate and ask critical questions about how users must negotiate and navigate algorithmic personalisation practices in everyday life; how Google Now's personalisation strategies attempt (yet fail) to interpellate (or indeed interpolate[34]) the user as a worker, a commuter and sports fan and stocks fanatic; or how privacy tools like Ghostery might help users resist the economy of data tracking, and yet simultaneously support that very same industry.

Bettig (1996) notes that in capitalist markets the social relations created between media institutions and media consumers often involve value extraction and commodification of consumer interactions; he states therefore that 'with its focus on institutional structures and practices the political economy of communications is poised to help explain these processes' (1996: 1). Referring specifically to algorithmic personalisation practices, Bodle argues that

[34] Though Google Now's 'interpellation' of individuals in the Althussurian sense that they are 'hailed' as ideal users by Google Now's computational architecture, individuals can also be considered to be interpolated into personalisation practices from a political economic viewpoint, in that they are inserted as data point into mass data sets (Bolin and Andersson-Schwarz, 2015).

political economy affords 'an analysis of asymmetrical relationships between online services, advertisers, and users' in ways that make visible 'a process of commodification of social labour where personal information is turned into product, reconfiguring social relations a result' (2015: 132).

The 'asymmetrical relationship' Bodle describes here can also be considered as an (unequal) exchange of *data-for-services* introduced in Chapter Two – that is, web users are required to allow their data to be mined, harvested and subsequently commodified in exchange for the use of free (at the point of use) and convenient online services. A number of other scholars such as Terranova (2000) Andrejevic (2011), Dean (2005), Ekbia (2016) and Fuchs (2010) have critiqued this commodification of user data as a form of unjust exploitation. Such analyses are valuable for considering how users who encounter personalisation might be commodified as data providers; however, I would like to briefly outline why questions of exploitation do not provide the central underpinning of my own qualitative research.

Critical political economy and user exploitation

In his critique of online value extraction, Andrejevic notes that the corporate owners of apparently 'free-to-use' social networks such as Facebook seek to exploit the 'immaterial labour' (2011: 89) that individuals perform in the way of both content and data production. Although Andrejevic notes that 'users clearly enjoy and benefit from online activities even as they generate value for commercial websites' (2011: 87), he argues that the value extraction from user data equates to a form of exploitative asymmetrical social relations between commercial platform providers and web users. Others such as Terranova (2000), Dean (2005) and Fuchs (2010) have employed similar critiques, arguing that the contemporary web economy mirrors and supports the unequal power and labour relations between labourers and production owners in late capitalist markets.

Jarrett (2014a) notes that value extraction from user interactions is often framed as a form of exploitation of 'immaterial labour', which can therefore be explored through Marxist feminist frameworks that have long-sought to critique 'women's work' – that is, domestic, relational and emotional labour traditionally enacted by women. However, Jarrett notes that such feminist works have 'barely featured' in contemporary arguments surrounding user exploitation in online platforms (2014a: 14). Jarrett argues that by considering these feminist frameworks, it becomes possible to critique user interactions on social media not *just* in regards to exploitation, but also in regards to inalienable social relations. For example, she proposes that the process of 'liking' something on Facebook is commodified because the social relations involved 'are alienated from the user's individual lived context and rendered into complex formulae for the ascription of advertising formats' (2014a: 20). However, this commodification process is only possible because 'before it becomes user and (usable) data, 'the "like" is first a manifestation of an (already existing) set of social affinities, affective interactions or personal desires that satisfy nonmaterial need' (2014a: 20). Here then, Jarrett argues that 'the affective intensity associated with exchanges on Facebook does not lose its capacity to build and sustain rich social formations even if, later, it enters into the commodity circuit' (2014a: 20).

Jarrett's arguments strike some chords with my own research because I am not primarily interested in *if* users are exploited – though I agree for the most part that they are exploited – but *how* users negotiate and engage in the largely asymmetrical data-for-services exchange that also commodifies their experiences and socio-computational interactions. I am reluctant here to describe these experiences as pre-existent or inalienable from the commodification process because algorithmic personalisation creates a possibility for a performative and co-constitutional relationship between user and system. What I would stress however, is that though user experiences are being commodified under algorithmic personalisation, *how* they engage with algorithmic personalisation is not simply a matter of exploitation, or indeed fair exchange. As Jarrett states: 'The agency of users is not in simple opposition to the exploitative

relations of capitalism but is deeply implicated in their maintenance in ways that require rigorous disentangling' (2014a: 24). This thesis looks to acknowledge the structuring relations of capitalism (after all, participants were well aware that they were undertaking *some* form of exchange of data-for-services, as I will explore) whilst at the same time avoiding the binary oppositions of exploitation and fair exchange. My research suggests that given the context, user negotiations of their positions as data providers can be nuanced, complex and at times contradictory.

Studying the effects of data analysis without using Big Data analysis

Algorithmic personalisation practices relate to the elusive matter of 'Big Data' in that they rely on massive data sets in order to anticipate the user and infer what is personal to them. Kitchin draws on extensive literature to argue that 'Big Data is characterized by being generated continuously, seeking to be exhaustive and fine-grained in scope, and flexible and scalable in its production' (Kitchin; 2014: 2).[35] However Lyon notes that 'Big Data occurs in a variety or contexts… one big mistake is to imagine that similar kinds of ends and possibilities of success are in view whatever the context' (2014: 2), and so this subsection explores only Big Data analysis in relation to commercial data tracking. Boyd and Crawford's assertion that Big Data produces 'new… methods of knowing' (2011: 3) applies to algorithmic personalisation research – as mentioned in the critical context chapter, Hosangar et al. (2014) have used big data analysis to research iTunes personalisation system. However though Big Data has proved useful for some explorations of algorithmic personalisation, this thesis does not utilise big data analysis as part of its methodology. I would like to spend some time explaining the reasons behind why such a methodology has not been chosen.

[35] Kitchin also defines Big Data as 'huge in *volume*, consisting of terabytes or petabytes of data; high in *velocity*, being created in or near real-time; diverse in *variety*, being structured and unstructured in nature; exhaustive in *scope*, striving to capture entire populations or systems (n.all) fine-grained in resolution and uniquely indexical in identification; relational in *nature*, containing common fields that enable the conjoining of different data sets *flexible*, holding the traits of *extensionality* (can add new fields easily) and scaleability (can expand in size rapidly)' (2014: 2).

The first reason is access to data sets – or rather lack of it, due to 'the logic of commerce' (Chan, 2015; 1078) that limits academic engagement with some commercial big data aggregation. Attempts to access commercial data for my own research mean I have experienced this problem first hand. For example, during my investigations into Google Now I tried to gain access to a number of APIs[36] that would make available to me the mass data sets processed by the app. However, further investigations revealed that these APIs were designed solely for developers interested in developing new Google Now cards *for commercial purposes.* As Lomborg and Bechmann note, 'the usefulness of APIs for researchers is very much dependent on the developers and commercial providers of the service' (2014: 260), who can 'freely decide' to impose whatever restrictions they require to commercially protect their dataset. Using Google's APIs would thus have meant reorienting my research to suit the governing logic of Google – and considering that one of the aims of this thesis is to explore how the 'horizons of possibility' created by algorithmic personalisation might govern individual interaction, to reorient my methodological approach to suit the APIs on offer felt antithetical, even hypocritical, to the research aims of this thesis.

The restricted research capabilities of APIs leads to my next methodological consideration of big data analysis: that is, ethics. As Lomborg and Bechmann note, the collection of mass data sets, especially through social media, give rise to a host of ethical issues surrounding sensitive information and informed consent (2014: 261–262). They write 'the issue of whether to ask participants for their consent does not *per se* disappear just because the data are made publicly available' (2014: 261). Therefore, even if I could access Google Now's databases, the question

[36] Lomborg and Bechmann define an API as 'an interface of a computer program that allows the software to "speak" with other software. This enables the development and enhancement of the core social media services, for example, by allowing for third-party companies to develop their own software clients for using Twitter or integrating Facebook with other social media service' (2014: 256).

remains of whether I *should* access them; to do so would be to access individual users' (anonymised) data without their consent.

Finally, it seems important here to consider the argument, notably raised by Manovich (2011), that those users who provide the data for platforms have neither control nor insight into what happens to their data once it has been harvested (a point raised by many of this thesis's participants). In using qualitative methods, my research thus looks to explore algorithmic personalisation not just through the lived experience of those users who lack both insight and control, but also from their perspective. As boyd & Crawford claim, big data analysis brings with it not only different data but a potentially 'profound change at the levels of epistemology and ethics – and as such Big Data creates new ways of knowing that must be reflexively criticised to combat the assumption that "the numbers speak for themselves"' (boyd & Crawford, 2011: 3-4). A number of Software Studies theorists have echoed this notion – Berry suggests that the increasing reliance on Big Data for forms of knowledge production demand we critique the modes of 'rationalisation' that such knowledge production creates (2014); whilst Brunton and Coleman argue we need to 'get closer to the metal' when it comes to hardware *and* software, not in the sense of 'materiality' but through interrogation of the 'dynamics of the machine' (2014: 97) to understand what we ontologically take to be the 'object' of study in contemporary research practices.

Such theorisations highlight that 'the numbers' never 'speak for themselves' – the forms of knowledge production facilitated by Big Data demand interrogation at an ontological level that does not assume that numbers equate to knowledge. To return to my methodology then I want to emphasise that although the *numbers* may not 'speak for themselves', those *users* implicated in personalisation practices can and do. Ruppert, Law and Savage seem to argue that Big Data research methods allow us to circumvent the 'self-eliciting' bias of qualitative data collection, because 'digital devices are modes of observation that trace and track doings. In the context of

people, instead of tracking a subject that is reflexive and self-eliciting, they track the *doing subject'* (2013: 35). I would argue that though data tracking might attempt to know the 'doing subject', Ruppert, Law and Savage's own analysis actually problematises how and why the dividual (*not* necessarily the subject) is constituted as a 'doing' entity – as outlined in Chapter Two, the methods employed by data trackers are often not interested in tracking individuals as 'people' (Ruppert, Law and Savage, 2013) but rather as assemblages of nodal correlation. Such methods to me thus throw the pursuit of knowing the 'doing *subject'* very much into question.

In contrast to Ruppert, Law and Savage, Couldry, Fotopoulou and Dickens argue that 'equally important [in regards to Big Data analysis] is the study of how social actors *themselves* deal with the increasing embedding of quantification, measurement and calculation in their everyday lives and practices' (2016: 3). Furthermore, the works of Livingstone (2010), Lapenta and Jørgensen (2015) Best and Tozer (2012), and Kennedy (2015) incorporate analysis of technology users as reflexive subjects, and increasingly projects such as the Oxford Internet Institute study on 'Learning and Interaction in MOOCs' (Gillani and Eynon, 2014) are (re)recognising the value of collecting 'small-scale', user-articulated data alongside big data sets in order to build a more robust epistemological picture of how online environments are used by individuals. The agential capacities of users as 'reflexive subjects' give them a voice outside of and alongside big data analysis, and this voice allows researchers to ask and answer a different set of questions from those facilitated by big data analysis alone. Thus, as this thesis hopes to highlight, there is great value in analysing the accounts of these so-called 'doing subjects'; after all, they might be traceable but they are certainly still reflexive.

Chapter Four

Personalisation and privacy: how do Ghostery users negotiate their positions as 'data providers'?

'The fact that people monitor everything you do takes away the ability to be you in a sense'
(Chris, unemployed/ activist/ digital miner up the North-West Passage,[37] UK, in interview, 2013).

Part I

Introduction: Ghostery, the 'window to the invisible web' (Ghostery, 2013)

This chapter is the first of three to focus on a specific site of investigation, as well as draw on qualitative interview materials, to scrutinise the horizon of possibilities that personalisation creates for those who engage with and negotiate specific algorithmic personalisation practices. The site of investigation that takes the focus of this chapter is Ghostery – an online privacy tool which allows web users to track and block commercial data trackers that are tracking them as they surf the web. The qualitative materials that form the basis of my analysis are drawn from semi-structured interviews with twelve Ghostery users. Taking Ghostery's own rhetorical sum of 'Knowledge + Control = Privacy' (Ghostery, 2014) as a conceptual starting point, this chapter looks to explore the relationships between data tracking, privacy and personalisation, and in particular asks how web users who are concerned about their privacy might understand, engage with and negotiate these relationships. A number of themes emerged from participants' interviews; for example the notion that though Ghostery affords a degree of 'control' to some participants, the 'knowledge' that Ghostery promises emerged as 'but an illusion' for other

[37] As soon-to-be unemployed activist, campaigner and non-university affiliated intellectual, participant Chris was reluctant to give himself a job description – in the end we settled upon 'activist', 'unemployed' and 'digital miner up the north west passage', though none of these descriptions fully encompass Chris's multi-faceted occupational positions.

participants, and especially produced what I describe as *epistemic anxieties* in some participant accounts (particularly those who would in HCI terms be classed as 'power users'). The chapter also explores the data-for-services exchange participants have to negotiate, which at times emerged as a juxtaposition of data tracking as 'creepy' and 'wrong' but algorithmic personalisation as 'convenient' in some participant accounts. Finally, the chapter interrogates the discursive framing of identity by participants as a pre-existing and inner formation that must be 'protected' from the ubiquitous surveillance of data trackers, wherein (as the title quote suggests) data tracking 'takes away the ability to be you'. I will argue that this framing exists in tension with other identity formations that algorithmic personalisation demands; that is, identity as a flexible, correlational, endlessly expressive and recursive entity that can be continuously re-configured and worked on.

As Chapter Two examined, there are thousands of first party web platforms that use personal data aggregation as a primary monetisation strategy. However it is not just well-known first parties that use data tracking – a host of third parties (Quantcast, Adbrain, Omniture, Audience Amplify, Outbrain, Gravity, Audience Science, Optimizely - the list goes on) also use data tracking as part of their analytics, advertising, traffic monitoring and behavioural profiling services. These services use various computational mechanisms to profile track and target users, drawing information from their site-to-site movements, their online purchase and browsing histories, their profiles, and their consumption habits (McStay, 2012; Turow, 2011; Peacock, 2015).

As noted in previous chapters, marketers that once sought to identify audiences/ individuals through representational demographics now use algorithmic processes of behavioural identification and abstract, computational correlation (Bolin and Andersson-Schwartz, 2015; Savage, Ruppert and Law, 2013). The two thousand third party trackers that Ghostery claims to track and block include some of the key players in this newly developed process of user

anticipation. Many of these data tracking companies specifically cite the personalisation of content and services as the primary reason for the tracking of users. For example 'content discovery platform' Outbrain 'recommends personalised links based on each individual's content preference' (Outbrain, 2014), whilst 'personalisation engine' Gravity 'understands people's interests so that our partners can create more relevant experiences for their users' (Gravity, 2013). Other notable data trackers include the Experian Marketing Service, owned by credit report company Experian, Google's DoubleClick, more than three Facebook data tracking subsidiaries, Full Circle Studies, who claim to 'better understand the likes and dislikes and consumers' (Full Circle Studies 2014), and the highly successful Quantcast who help advertisers 'connect with the people who matter most to them' (2013).[38] The objectives of these third party data trackers reflect a far-reaching drive to personalise advertising, content, services and interfaces that is currently fuelling a successful, sprawling and largely opaque business-to-business industry constituted by thousands of companies.

In the wake of Snowden's allegations that commercial platforms such as Google, Facebook and BT have been aiding the state dataveillance of millions of web users worldwide (*Guardian*, 2013; Lyon, 2014), popular and academic debates surrounding online privacy have proliferated and have increasingly both spanned and blurred the line between *state* surveillance and the *commercial* dataveillance strategies deployed by third party trackers. Critics such as Lyon (2015), Lovink (2016) and Seeman (2014) have identified a 'post-Snowden' state of ubiquitous, totalitarian surveillance in which the line between commercial data aggregation and state surveillance seems to have collapsed. I believe notions of a 'post-Snowden' era of surveillance can be complicated and contested – for example by the lack of sustained change in user data sharing practices, which suggests the Snowden scandal has had little lasting impact in terms of

[38] Quantcast are one of a number of third party data trackers endorsed by 'online privacy management services provider' Truste (Truste, 2016). Such endorsements highlight that despite criticism from factions of the public, industry-facing privacy compliance companies such as Truste continue to endorse the tracking of users by third parties.

user *behaviour* towards commercial data tracking;[39] by *The Guardian's* condemnation of state surveillance as they simultaneously subject their own online readers to extensive commercial dataveillance (Cesca, 2014); or by scholarly work that predates the Snowden scandal, such as Bassett's (2007), but that highlights similar state/ commercial collapses in surveillance-related state actions. I will explore the relation between state and commercial dataveillance in latter sections of this chapter, but here I want to acknowledge that the conflation of commercial data tracking with state surveillance was reflected in the testimonies of participants, and it is therefore important to highlight that interviews for this study are historically situated within the wake of the Snowden scandal – all interviews were carried out in late 2013, shortly after the scandal broke.

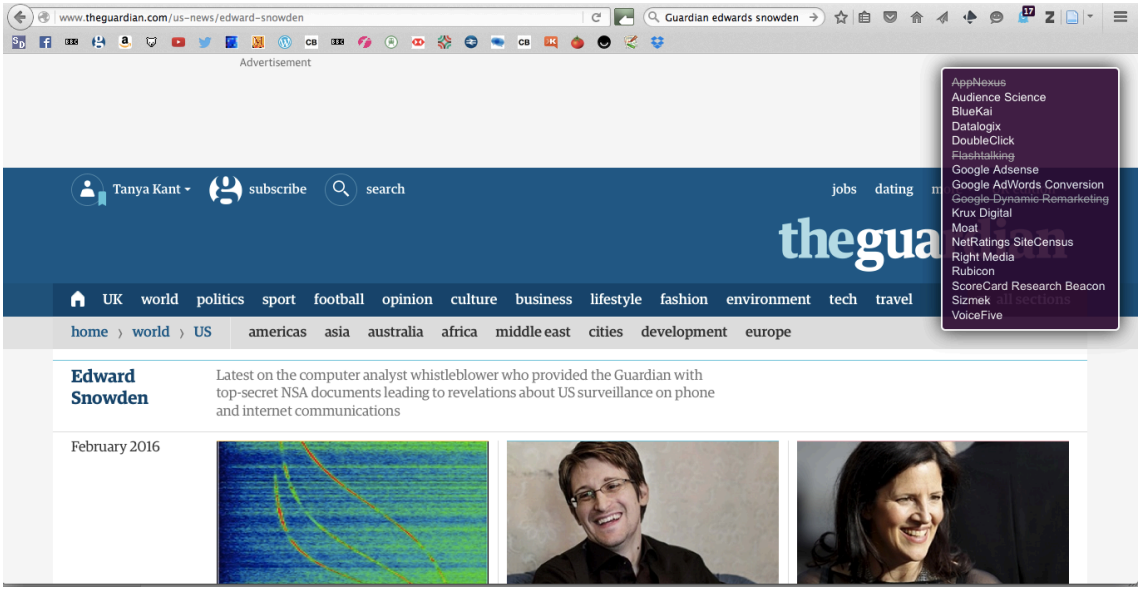
Though research by Turow et al. (2015) and Ofcom (2015) suggests that in the US and UK, web users' resistance towards commercial data tracking remain muted (see footnote 39), a number of tracker blocking applications have become publicly available to those web users who are interested in 'protecting their privacy'. The browser add-on Ghostery is one such piece of software.[40] Claiming to function as a 'window to the invisible web', Ghostery is a cost free browser add-on that displays and blocks the third party trackers that monitor a user's site-to-site (and indeed page-to-page) movements as they traverse the web. Ghostery monitors the movements of over 2,000 data trackers – 'ad networks, behavioural data providers, web publishers and other companies' (Ghostery, 2013) – and, through a pop-up 'purple box' (see figure 1.) that appears on every web page, indicates to a user how and when trackers are

[39] For example, Ofcom's most recent report on UK web users' online privacy concerns suggest that '[t]he majority of internet users say they would share personal information online' (2015: 14). The report suggests that though web users' privacy concerns have increased, this is geared towards fear of *fraud* or *user-to-user* data sharing rather than user-to-company data sharing – for example, the report states 'seven in ten (68%) say they are happy to provide personal information online to companies as long as they get what they want' (2015: 14). A recent report by Turow, Hennesy and Draper finds that though the US public do care about privacy, they are habitually 'resigned to giving up their data' to commercial platforms (2015: 3). Such research highlights that through privacy *concerns* may have increased, there has been little change in the *behaviour* of web users in regards to submitting to data tracking on the grounds of privacy.

[40] As Mayer notes, Ghostery is just one 'self help tool' available. Mayer lists Abine's Do Not Track, Easy Privacy, Privacy Choice and Easy List as other tracker blocking tools (2013). Other notable tracker blockers include Tor, Ad Block Plus and LightBeam.

harvesting data from their online trajectory. Perhaps most importantly, Ghostery gives users the opportunity to block these trackers, either on particular sites or on the web as a whole. Users can choose to block as many trackers as they wish, or conversely, block none but still be notified when a tracker is identified by Ghostery. As I explore later in this chapter, despite attracting criticism for being owned by commercial 'privacy compliance' company Evidon (Simonite, 2013), Ghostery now claims to have over 20 million users worldwide (Ghostery, 2014).

Figure 1. Ghostery's 'purple box' (right hand corner). The box displays and blocks commercial trackers that are present on the site the user is visiting (2013–2016). Please note the 'purple box' format was replaced by a different interface c. April 2016, however at the time of interviews Ghostery used the 'purple box' design.



By acting as a 'window to the invisible web', Ghostery's functionality seeks to make explicit web users' position as 'data providers' (Van Djick, 2009) to commercial online platforms. As Van Djick notes, despite popular rhetorics that champion user content-generation as a form of value (for both users and platforms), web users are worth the most as 'data providers' for platforms and advertisers interested in their value as potential consumers (2009: 47). The positioning of web users as 'data providers' is especially significant in relation to Ghostery in that, in the context of this case study, Ghostery users can be considered to emphatically reject the subject-position of

'data provider' – implicitly through their use of Ghostery and, for the users I interviewed, explicitly through their testimonies, understandings and reported experiences. However, even as this position is made explicit to users by Ghostery, it is simultaneously also called into question – by Ghostery's capacity to block trackers from accessing users' data. This raises some interesting questions, especially in relation to notions of privacy and understanding of personalisation: how do Ghostery users negotiate their (apparently unwanted) position of 'data providers'? How does their unwilling provision of data to data trackers intersect with popular ideas of privacy – and the invasion of it? Finally, what role, if any, does algorithmic personalisation play in Ghostery users' negotiations with data tracking? The discussions, testimonies and insights provided by participants offer a range of responses to these questions, as I will explore.

Ghostery in relation to personalisation

Ghostery offers its users the opportunity to 'personalise' their web experience by giving individual users a high degree of choice in blocking whichever commercial third party trackers they wish;[41] as such Ghostery can be considered as an example of a service that employs some form of personalisation. However, the personalisation practices that Ghostery offers to its users differ from the algorithmic personalisation practices that constitute the focus of this thesis in that Ghostery affords control of that choice to the user, rather than the system. Thus, Ghostery can be considered a form of *user-initiated* customisation rather than *system-initiated* or algorithmic personalisation. Marathe and Sundar align user-initiated personalisation with the power to grant users agency – they write: 'clearly, the ability to act as a gatekeeper is likely to imbue users with a sense of agency, identity and investment in both the process of customization and consumption of customized content' (2010: 299). It is important to note however that though Ghostery *appears* to grant users a high degree agency and control through

[41] That is, those third party trackers listed in Ghostery's database, which as Ghostery themselves admit, may not include all third party trackers.

its functionality, the participant accounts that follow suggest that for some Ghostery users, such control might be 'but an illusion'. I explore this in detail below but here I want to highlight that the *supposed* control and agency granted by Ghostery mean that it can be considered as a form of user-initiated customisation.

Ghostery's relevance to my project is twofold however in that Ghostery is not only an example of user-initiated customisation in itself but actually renders transparent the 'back end' of the algorithmic personalisation practices with which web-users are confronted. Ghostery thus functions to accommodate the study of user control and choice that user-initiated customisation supposedly affords, and also facilitates an examination of how users understand, negotiate and engage with the back-end data tracking and anticipation strategies upon which algorithmic personalisation practices rely in order to render users' web experiences 'personal'.

The framing of Ghostery by Ghostery: 'Knowledge + control = privacy'

Though the front page of the Ghostery website has changed a number times (at least five) since early 2013 when I first began this research (see figures 2-6), at the time when the interviews were conducted in late 2013/ early 2014, Ghostery's front page was emblazoned with the following header:

'Knowledge + control = privacy' (Ghostery, 2013).

Though a rhetorically convenient 'sum' for Ghostery, these terms also represent a useful foundation for approaching the critical frameworks relevant to this exploration of algorithmic personalisation. As I will explore, in relation to data tracking these terms are commonly mobilised as topics of debate (whereas 'personalisation' is less so), and can also be used to structure a relevant literature framework. I will consider 'knowledge' in relation to data tracking as it as been critiqued by scholars such as Brunton & Nissenbaum (2011), Berry (2013), De Certeau (2002), Gillespie (2014) and Seeman (2014); 'control' (or rather the lack of it) in

regards to data tracking as broached by McStay (2012), Bodle (2015), and Sandar and Marathe (2010); and finally 'privacy' as examined by the above scholars and Agre (1994), Lynch (2013), Mai (2016) and Jordan (2014) as a concept that demands re-examination in the age of networked communication and individualisation.

Not only apparent in rhetorical, popular and critical contexts, the parts of Ghostery's sum ('privacy', 'control', 'knowledge') were also frequently mentioned by Ghostery users themselves. Given that Ghostery's marketing materials mobilise the add-on within and through popular paradigms of online privacy, it is perhaps not surprising that 'privacy' featured as persistent topic throughout the interviews. However, given that the data tracking Ghostery

Figure 2. Ghostery's front page, early-mid 2013.

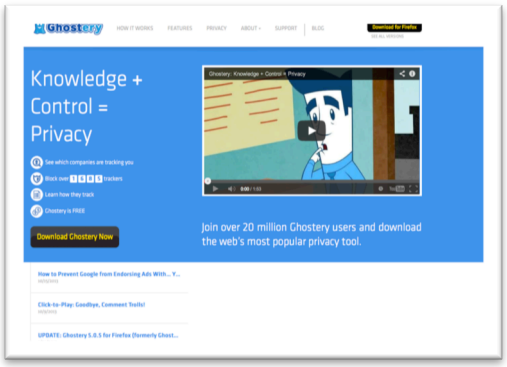


Figure 3. Ghostery's front page, late 2013–mid 2014.

users seek to resist is performed in the name of 'personalising' user experience, I want to go beyond the paradigm of privacy and instead consider Ghostery users' understandings of data tracking in relation to algorithmic personalisation. In other words, if 'Knowledge + control = privacy', then where does 'personalisation' fit in? This chapter looks to answer this question through the accounts and testimonies of Ghostery users themselves.

Figure 4. Ghostery's front page mid-late 2014.

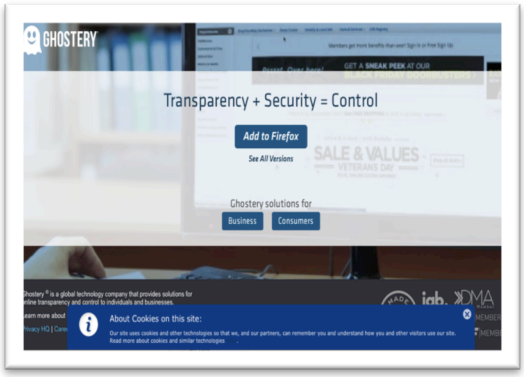


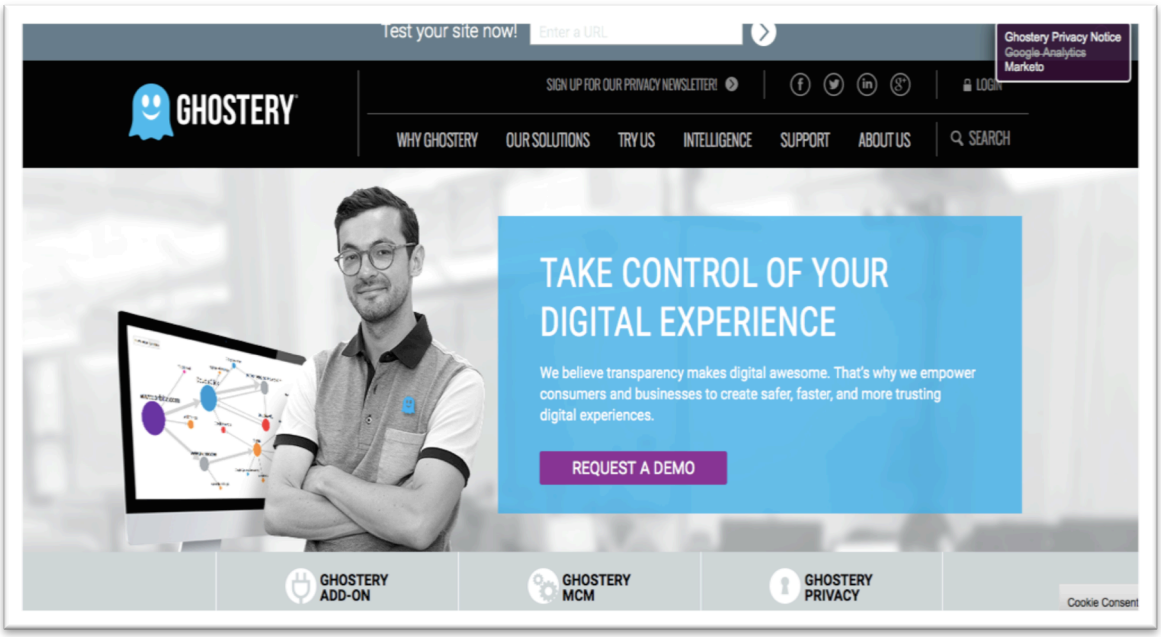
Figure 5. Ghostery's front page early-mid 2015.

Method

My methodological approach set out to explore respondents' opinions, desires and experience of Ghostery, data tracking, online privacy and personalisation – a form of knowledge that according to Kvale and Brinkman represents *doxa,* 'that is, it is about the interview subjects' experience and opinions' (2009: 36). In addition to this 'experiential' component however, my enquiries sought to underpin respondents' *rationale* behind their privacy concerns in relation to data tracking and personalised services – that is, not only how they engage with Ghostery, personalisation and data tracking, but *why* they chose to use Ghostery, and *why* privacy matters to them. As such the chapter also attempts to accommodate a form of knowledge that represents respondents' *episteme* – 'knowledge that has been found to be valid through conversational and dialectical questioning' (Kvale and Brinkman, 2009: 36). This became particularly important in teasing out participant tensions between perceived and 'real' control over their data trails, as well as trying to unpick why privacy was framed by some participants as an individual 'right' that must be protected, whereas personalisation was treated as an acceptable and convenient practice.

In sum, I have undertaken twelve interviews with Ghostery users: seven of these were face-to-face, undertaken in London, Guildford or Brighton, UK, and ranged from thirty-five minutes

Figure 6. Ghostery front page: mid 2015–present (May 2016).



to two and a half hours. Two interviews were conducted via Skype, with respondents calling from the US and Canada and with both interviews lasting approximately one hour. The final three interviews were conducted via email, with respondents completing an interview sheet comprised of questions matching the questions presented to live respondents (see Appendix C). Respondents were all English speaking, though for some English was their second language. Email interviews were preceded by a series of follow-up questions tailored specifically to further engage with the respondent's initial comments. By following the email interviews with further questions, these email exchanges sustained a dialogical quality comparable to the live interviews. As the previous chapter stresses, it is important to emphasise that the participants interviewed here are not necessarily representative of the whole Ghostery user-base: instead user accounts are here analysed within the context of *their own specific negotiations* with Ghostery and third party data tracking/ personalisation practices. In keeping with Ghostery's own assertion that 'control + knowledge = privacy', I have thematically arranged the following analysis to fit their sentiments.

Part II

'Control': Ghostery as a tool for consent & control

As previously stated, 'control' is rhetorically presented by Ghostery's marketing materials to be a required part of the sum, that together with 'knowledge' equates to 'privacy'. How then did interview participants understand and negotiate notions of 'control' in the context of the data tracking that Ghostery not only reveals but also attempts to block?

For almost all respondents, the lack of control over their data emerged as a central topic of concern. For respondents such as Yoda (IT user support officer, UK), Gyrogearsloose (unemployed, Canada), Katherine (Managing Director, Netherlands) and Mary (web developer, US),[42] Ghostery was (at least initially) framed as an opportunity to intervene and respond to the data tracking involuntarily imposed on these web users. For example, when I asked Mary why she used Ghostery, she replied:

> I use quite a few add-ons to try and prevent tracking and things… you know, [Ghostery] was just another way to have more control over what was going on in the browser… it sort of allows you to be a little bit more in control of things.

She added she felt she 'had absolutely no control over this data' (that is, the data that third parties, without Ghostery, could potentially collect), whilst Gyrogearsloose's interview started with a very positive description of Ghostery: 'I love it, it shows me what it is that's tracking... and it allows me to turn it off and on at will'. Similarly, Yoda stated in regards to his Ghostery use that 'it's all about control and who has that control' and Katherine, as part of her explanation of her motivations for downloading Ghostery, stated:

> You want to be in control of who accesses whatever you are doing on the internet, and currently you aren't so you don't know exactly what will happen with the data, especially when firms like Ad Track [one of the trackers Ghostery flags] start to sell it to merchants or try to amass huge amounts of data about you.

[42] See Appendix A for full interview list and further interview details.

These accounts thus suggest that the high degree of control, rendered possible by a large number of customisable settings, was a clear motivation for use of Ghostery. The works of scholars such as Turow et al. (2015), Peacock (2015) and McStay (2012) suggest that on the contemporary web, 'people have little control of their everyday data' (Turow, 2015: 5), and so web users with privacy concerns are increasingly turning to tracker blocking tools to attempt to 'take back control' of their data trails (Peacock, 2015). In some ways then, the finding that Ghostery gives these participants a sense of control is perhaps unsurprising: as its own marketing sum exemplifies, this is what Ghostery sets out to do.

What I do want to highlight here though is that, if we consider Ghostery to be an example of user-initiated customisation, it becomes apparent that the high degree of user choice written into Ghostery's functionality resulted in some participants feeling more 'in control' of a situation in which the third party trackers has afforded them none. This increased degree of perceived control afforded through Ghostery highlights the crucial difference between user-initiated customisation (here represented through Ghostery) and system-initiated personalisation (here represented by third party data tracking practices). As Sundar and Marathe note, 'customizable systems' inherently 'gives high priority to user control and involvement, and therefore place users in the "driver's seat"' (2010: 301). In doing so Sundar & Marathe argue that UIC practices afford respondents a 'greater sense of control' (2010: 312), which is certainly what Ghostery seems to be doing here. However, in the next section I want to complicate this by exploring participant acknowledgements that this sense of control might be just that: a *sense* rather than a tangibly effective tool for taking ownership of their data trail. The perceived control that Ghostery affords as an example of UIC is very much problematised when considered alongside the second part of Ghostery's sum – that is 'knowledge'.

'Knowledge': Ghostery as a tool that creates uneasy insight

'*Ignorance is bliss'* (Gyrogearsloose, in interview, 2013).

'Ghostery has given me a false sense of security' (Claire, in interview, 2013).

'In reality, I have no illusion that my data trail is covered up' (Christopher, in interview, 2013).

Though 'control' was discussed by the Ghostery users I interviewed in relatively straightforward terms, the 'knowledge' that Ghostery affords revealed a complex and nuanced set of negotiations for many participants. In his paper 'The Social Epistemologies of Software', Berry explores the 'computational social epistemologies that we have increasingly grown to take for granted in computational society' (2012: 381). Referring specifically to Ghostery, Berry examines the impact of data tracking on web users' experiences of the internet. He recognises the opacity of the data tracking industry in relation to the web users it seeks to track:

> [W]eb bugs, beacons, pixels and tags, as they are variously called, form part of the darknet surveillance network[43] that users rarely see even though it is profoundly changing their experience of the internet in real time by attempting to second guess, tempt, direct and nudge behaviour in particular directions (2012: 384).

Mirroring Brunton and Nissenbaum's (2011) notion of 'epistemic asymmetry' defined in Chapter Two, Berry here recognises the lack of epistemological insight afforded to users in the context of ubiquitous and sprawling data tracking. Berry invokes Ghostery to shed some light on the 'subterranean depths' of commercial data tracking, arguing that tracker blockers such as Ghostery can be used as tools to make visible the actions of data trackers. My question here then is, do participants use Ghostery in a similar way? To what extent can Ghostery create pathways for new epistemological understandings?

For some participants, Ghostery's capacity not just to block but actually make visible third party trackers resulted in an increased feeling of 'insight' for many participants. For participants such as Christopher and HelloKitty, Ghostery's capacity to render visible previously invisible third party trackers was relatively welcome and straightforward – for example, Christopher,

[43] The term 'darknet' is also used to refer to specialised and usually conspicuous internet networks that can be only be accessed through specific softwares (BBC, 2006). However here Berry uses the term to refer to the commercial third party data tracking networks that Ghostery seeks to render visible and block.

(Senior Systems engineer, USA) stated that he finds the trackers that Ghostery displays 'mildly interesting; when I see them, I think "nice try, evil marketing company"'. Similarly HelloKitty (unemployed, UK), stated that 'I enjoy it so much to see all these names [in Ghostery's blocked list] and they are blocked'. Christopher's and HelloKitty's sentiments here suggest that there is affective pleasure to be found in the knowledge that these explicitly unwelcome trackers have been successfully thwarted, blocked by Ghostery's software – hence Christopher's reply of 'nice, try evil marketing company'.

However, for other respondents, Ghostery's capacity to enlighten the user was seen as something of a double-edged sword. For example, Edward (occupation undisclosed, France) actively stated that one of the reasons he disliked Ghostery was *because* of the insight it provides; when asked what he didn't like about Ghostery, he stated – 'The only thing I don't like is that it has forced my [sic] to open my eyes to what is happening and I feel overly self-conscious.' Similarly, when asked what she *liked* about Ghostery, Claire (student, UK) replied:

> It gives me *a false sense of security* in terms of having data tracking… I like the fact that you can see, I just think it's interesting to see who's trying to harvest my information, say Facebook for example, I'm not even on Facebook and yet they're trying to steal my stuff [my emphasis].

In contrast then to Christopher and HelloKitty, who see the display of trackers by Ghostery as a welcome insight into a practice to which they were formerly unaware, Claire's response to the insight that Ghostery affords is more ambivalent – welcome, in that is offers a sense of 'security', yet met with scepticism because this security may be false. Claire was not the only participant to suggest that the insight Ghostery provides is a mixed blessing. For example, Gyrogearsloose's initial enthusiasm for Ghostery became increasingly nuanced throughout our interview. Despite his earlier assertion that he 'loves' Ghostery because he can see who is tracking him, when asked 'what does he know about the trackers that are tracking him', Gyrogearsloose replied that:

> I know nothing about them, er, some of them are kind of self-evident by their name but most of them I know nothing and very few do I actually get curious to see what they are, I don't know anything really about the trackers themselves… *Ignorance is bliss* [laughs].

Gyrogearsloose's insights suggest that Ghostery's initial ability to make 'visible' tracker blockers does not necessarily equate to increased 'knowledge'; although Ghostery does provide some information about the trackers it blocks, Gyrogearsloose does not feel 'curious' about them to find out what or who they are. However, Gyrogearsloose has a general idea what the trackers do with his information – he stated when asked what he thinks trackers do with his data that:

> Well the most obvious is ads directed y'know, to the individual based on their searches and y'know the sites that they visit, the rest of the information I assume is probably passed on… That's probably what it is, you know compiling data on demographics and you know interest preferences and things like that.

This somewhat uncertain knowledge sits in uneasy relation to his assertion that he 'knows nothing about trackers' – Gygrogearsloose does indeed know *something* about them in a universal sense, but without further and specific details about how, when and why his data trail is monitored, his trajectory as a 'data provider' cannot be fully plotted, pinpointed or revealed.

Gyrogearsoose's self-perception as someone 'who knows nothing' regarding data tracking is a telling marker that notions of 'expertise' have a role to play in resisting data trackers as I will explore shortly, but here I want highlight that Edward, Claire and Gyrogearsloose express an uncomfortable uncertainty over the kinds of knowledge that Ghostery can and cannot provide. Though they are well aware that Ghostery can render the *fact* of data tracking apparent, the precise trajectory of their personal data remains hidden and unknowable – and so, it seems, despite Ghostery's very functionality of making visible data trackers, ignorance is still bliss.

In these accounts, the 'epistemic asymmetries' (Brunton and Nissenbaum, 2011) that, as outlined in Chapter Two, are in created by data tracking between user and provider – produce what I term an *epistemic uncertainty* for the user who is implicated in this asymmetrical relationship. Ghostery allows a form of knowledge production that creates the ambivalent feeling that, sometimes, as Claire suggests, Ghostery in fact offers a '*false* sense of security'. As such this uncertainty is here articulated as a kind of epistemic *anxiety*. I stress anxiety here because the epistemic uncertainties expressed by participants featured in this thesis did not always emerge as a cause for concern; for example, the epistemic uncertainties of how Google Now tracks, anticipates and acts on users were expressed by Google Now project participants as a form of *trust* in Google, as I explore in Chapter Six. However, for these Ghostery users, notions of 'control' of their data fall short against the sheer complexity and opacity of the data tracking they face, forcing them to take up anxious positions as data providers that, through a pressing lack of insight, can lead to the sense that control is but an illusion.

Questioning the 'power' of 'power users'

I will return to *why* these users continued to use Ghostery despite the epistemic anxieties it creates shortly, but first I would like to examine the responses of other participants in relation to the 'knowledge' that Ghostery affords: that is, those participants that could be classed as 'power users'.[44] Sundar and Marathe suggest that 'technologically efficacious individuals' – 'so-called power-users', are more likely to enjoy user-initiated customisation tools because their

[44] The term 'power user' is used by the computer sciences to distinguish between those users who 'need' and 'expect' more from their technological tools than the 'average user' (see Sunder and Marathe (2010; Bhargarva and Feng, 2004). The term has an interesting double meaning in that 'power users' are treated as both those that need more 'powerful' computers (Bhargarve and Feng, 2004) and which are more 'powerful' in the sense that they are more skilled than 'average' users (Sundar and Marathe, 2010). Though I would argue the idea that having more 'skill' and 'needing' more powerful computational tools should by no means equate to the idea that a user is more 'powerful', it is nonetheless useful to use this term in the context of data tracking, as the 'knowledge' that usually equates to 'power' in the term 'power user' is thoroughly problematised by the epistemological impossibility of 'knowing' in any robust sense what happens to your data, as explored below.

skill set allows them to feel more in control of their situation (2010: 304). They make this distinction between 'power users' and 'non-power users':

> Power users spend a lot of time using different gadgets and browsing the internet... They may be classified as "experts" requiring less navigational support than novices… Non-power users, on the other hand, lack the expertise and interest in adopting newer technologies and interface features (2010: 305).

To apply these statements to my own research, a number of my participants seem to comfortably fit the category of 'power user' – Mary, (web developer, US) Katherine (managing director, Netherlands), Yoda (postgraduate student, UK), Robkifi (machine learning researcher, UK) and Chris (unemployed/ activist/ digital miner up the North-West Passage, UK) all recounted high levels of expertise and 'technological efficaciousness', and all made references to their extensive knowledge of commercial data tracking – often acquired through their occupation. The above descriptions and the very use of the word 'power' in the term 'power users' suggests that the high levels of expertise afforded to these individuals make them more 'powerful' than other web users; their skills, interests and insight will lead to a more robust sense of control and understanding over the technologies with which they engage. In light of this expertise then, can Ghostery offer a form of knowledge that leads to a more robust form of epistemological certainty? Can Ghostery afford more 'knowledge' – and perhaps by extension more 'control' – to these 'power users' in ways not possible for non-power users?

For many of the so-called 'power users' interviewed for this study, their expertise seemed to actually *increas*e rather than *decrease* their sense of epistemic anxiety created by data tracking. For example Robkifi explains that his work has led to a high level of understanding of data tracking, yet describes the '*unheimlich*' feeling he himself experiences when he is being tracked:

> So for my work I do realise that a lot of information is traceable and that in order to say, to create a website, because of the way the web is organised, you do need to track people in order to see what they've been doing on the website. So I had a quite a good insight into seeing what sort of information you can collect and started noticing that more and more, say other entities started collecting other information while you were on the web, without ever being asked if it's OK to collect that data. So it was more a general feeling of, the German word is *Unheimlich*, you don't feel entirely

> comfortable, that you would like to limit what is collected, and Ghostery seemed to be a fairly efficient way of doing that.

Robkifi's intriguing use of the work 'unheimlich' suggests then that although he may have a considerable amount of expertise regarding data tracking, he still feels an uncanny, unhomely sense of discomfort around the practice. The use of this phrase suggests that a psychoanalytic reading of Ghostery users' engagement with tracker blocking is quite possible, however, to provide a psychoanalytical analysis here I feel goes beyond the theoretical scope of this chapter.[45] What I would highlight though is that in describing the *feeling* of being tracked as 'unheimlich', it is possible to consider that the anxiety created through data tracking is an epistemic uncertainty that has affective, *ontological* implications – that is, being anticipated via algorithmic personalisation practices in opaque and unknowable ways has implications for users' ontological sense of self. I return to this in the concluding sections, however to address Robkifi's so-called 'power use' for now, he goes on to explain that:

> The odd thing is that I work in this field so I'm fairly well aware of what's out there, but I don't have the feeling I'm on top of it, and I find that very, that bothers me and a tool like [Ghostery] probably gives you a false sense of security that you are on top of it.

Robkifi's engagement is thus far from straightforward – despite of his supposed 'power user' status, he still retains that 'false sense of security' that Claire reported earlier. Despite his expertise, knowledge and use of technologies like Ghostery to protect his data trail, Robkifi's sense of power or control over his situation as a data provider for personalisation practices is very much called into question.

Another potential power user was Chris. A long-term activist, digital critical theorist and online privacy campaigner, Chris's technical knowledge of tracker blocking far outstripped my own. Not only highly technically accomplished, Chris was also happy to

[45] For work on the uncanny and cyberspace, see Zylinka's theorisation of cyberspace as 'intrinsically uncanny' (2001: 161) in *On Spiders, Cyborgs and Being Scared,* Causey's analysis of uncanny performance in cyberspace (1999), or Vidler's work on virtual space as uncanny in relation to architecture (1992).

share his intellectual and theoretical thoughts in exchange for my own. Despite his extensive knowledge and use of multiple tracker blocking tools, Chris used Ghostery because it was 'straight-forward' and 'easy-to-use' – though he stated also that he 'obviously doesn't trust it'. Like Robkifi, Chris also acknowledged the difficulties of using Ghostery – or indeed any tracker-blocking or privacy protection tool – to completely protect your information. He showed me the presence of Ghostery on his browser, but added that Ghostery doesn't seem to always block all trackers that he wants to block:

> I'm looking at *The Guardian*, I can find 14 trackers. Now *The Guardian* I regularly go through and I regularly block things but it's obvious that they put different, different trackers appear, so I've blocked for example Quantcast hundreds of times so I don't know what's happening there.... So while I use it I don't bet my life on it.

To counter this reported unreliability, Chris told me that he uses a plethora of tracker blocking tools rather than just Ghostery, some of which required programming skills and a high degree of computational understanding to use. Yet despite his expertise, insight and engagement with a number of technologies, Chris concluded our interview by stating that he could never completely protect himself online. When asked if he could track his own data in the ways he is tracked online, he replied:

> No. For me to track my own data trail, no. I'm fairly aware, as aware as most non-experts[46]... you can't track your own data.

Invoking state surveillance apparatus rather than the commercial third party trackers which Ghostery purports to block, he then stated that 'if the NSA or GCHQ want to pawn you, they're going to... maybe there's two or three people in the world that are capable of not having that'. Chris's engagement with tracker blocking then – despite his status as a 'power user' in HCI terms – reveals that he believes successful control over or even simply knowledge of his data trail is a near-impossible practice. The 'knowledge'

[46] Chris was not the only participant to identify as a 'non-expert', despite his high level of understanding.

then that Ghostery purports to provide to its users is seen by Chris to be an incomplete, fallible and fragmented.

Participant accounts here raise two questions here: 1) Why doesn't more expertise lead to more knowledge and therefore control, as HCI studies such as Marathe and Sundar's (2010) propose? And 2) why do these participants continue to use Ghostery if it fails to provide a better sense of epistemic security? I will return to the latter question shortly, but here I want to address the former question. To do so it is first helpful to consider what it means to be a 'power user' or 'expert'.

As Bassett, Fotopoulou and Howland explore, the term 'expert', when used in the context of user engagement with digital technologies, can be (re)considered as a flexible and contestable term that has been largely neglected in favour of popular debates surrounding 'digital literacy' or 'digital competency' (2013: 10). They note that computer sciences have tended to treat expertise as a measurable; 'to be an expert is to rise about a particular, and objectively defined level of competency' (2013: 14), yet the forms of expert knowledge articulated by these Ghostery users cannot be measured in such a straight-forward manner.

Instead, the expertise displayed by participants actually functions to *increase* their epistemological anxiety about what happens to their data trail, who controls it and how it might be used. Participants' 'expertise' then is best understood not as a form of 'power' but as framed within a 'techno-social system' that considers expert engagement with digital technologies and practices such as tracker blocking to be 'conditioned by material (code/ software), and by the political economy of computer industries and the social conditions of reception.' (2013: 14). Differently put, 'expertise', when considered alongside the asymmetries that commercial data tracking creates, becomes something that cannot be quantifiably fixed or measured. Thus, the measurable expertise that apparently amounts to 'power use' in HCI terminology is exposed as

the just the opposite – that is, the 'expertise' demonstrated by these participants leads to a *decreased* feeling of power over their data trails in the face of ubiquitous and sprawling data tracking.[47] Perhaps then this lack of 'power' felt by these so-called power users is why many of these participants described themselves as non-experts – they feel they cannot be experts in a process which they can never fully 'know'.

I would add to this however, by stating that it is not just the ambiguity surrounding 'where the data is, what it will do or what will be done to it' (Brunton and Nissenbaum, 2011: 2) that leaves data providers such as these Ghostery users epistemologically 'in the dark', it is also the cross-platform, constant and endlessly recursive nature of data tracking (Ruppert, Law and Savage, 2013) that adds to the epistemological anxieties of ever meaningfully 'knowing' your own data trail. That is, even if one were able to pin down and control their data trail on one day, the constant feedback loops created by recursive data tracking mean that the future of one's data trail would be endlessly altered from day-to-day. As Andrejevic point out, the 'infoglut' wrought by ubiquitous and endless data production means that 'staying on top' of our data becomes an epistemological impossibility, despite the emergence of tools that allow users to 'see' who is watching them:

> [A]t the very moment when we have the technology available to inform ourselves as never before, we are simultaneously and compellingly confronted with the impossibility of ever being *fully* informed (2013: 2).

Mai argues that the impossibilities of ever being fully informed about our data trails means that, when it comes to data tracking, 'the privacy concern is reconfigured from which facts [data tracking] entities *know* about people to which facts the entities have *produced* about people' (2016: 198, my emphasis). Mai's argument highlights that data tracking produces new forms of

[47] Bassett et al. also note that in contemporary societies there has been an increasing 'automation of expertise', wherein computational tools are 'designed to shift the burden of expertise in relation to using from the human to the computer' (2015: 336). There is evidence of the automation of expertise at work in Ghostery – as a privacy tool it is designed to have 'non-human expertise' (2015: 330) in what commercial trackers exists and further how to effectively block them. Here however, the automated expertise is clearly failing in the eyes of participants – and moreover, I would argue that the epistemological impossibility of ever holistically 'knowing' the extent and reach of one's data trail means that automated expertise in this case can only fail.

knowledge about users, rather than just collects existing knowledge about them. It is this newly-produced (or indeed *still-to-be* produced, given that users cannot know what will happen to their data once it is harvested) knowledge that Mai contends produces new privacy considerations, and which I argue contributes to the epistemological uncertainty expressed by these Ghostery users.

Thus, if we consider Sundar and Marathe's (2010) proposition that user-initiated customisation is supposed to grant users an increased sense of control, it becomes clear that the 'knowledge' required to feel in control is not being produced or sustained by Ghostery as an example of user-initiated customisation. Though Ghostery is able to provide some kind of 'knowledge' they are being tracked, it is a knowledge that ultimately creates for my participants an epistemic anxiety that they might never *know enough* in order to protect themselves, no matter how 'powerful' they might appear to be.

Ghostery as a site of tactical resistance – or a site of belief

To return to my second question: why do users – both so-called 'power' and 'non-power' – continue to use Ghostery if it only leads to epistemic anxiety? Why continue to use such a tool if, as Gyrogearsloose suggests, 'ignorance is bliss'? Rather than use Ghostery as a concrete and infallible tool of knowledge production and privacy protection, Gyrogearsloose sees his use in more playful, resistant and emotional terms. Gyrogearsloose told me:

> Basically my motivation [for using Ghostery] wasn't to establish privacy as so much as to make it more difficult for people who are tracking me, I mean I don't doubt that I'm still being tracked, but now there's an added degree of difficulty for Google, Facebook and the NSA and Canadian equivalent, you know, and they have to find workarounds and I don't doubt that they are doing that it, but as I say my motivation is *mostly an up yours gesture* [laughs].

Other participants echoed similar sentiments; as mentioned earlier Christopher's phrase 'nice try, evil marketing company' connotes a kind of pleasure in resisting unwanted data tracking. Here then, Ghostery is mobilised as a kind of tactical resistance in keeping with De Certeau's

theorisation of the distinction between tactics and strategies. Though both are 'trajectories', for De Certeau (1984) strategies are far more powerful manoeuvres than tactics. He states that 'strategic rationalization' is the 'typical attitude of modern science, politics and military strategy' and that it 'privileges spatial relationships'. He states that strategic rationalization is:

> [A] mastery of places through sight. The division of space makes possible a *panoptic practice* proceeding from a place whence the eye can transform foreign forces into objects that can be observed and measured, and thus control and 'include' them within its scope of vision (1984: 39).

In the context of algorithmic personalisation, strategic rationalization appears to correspond with the strategies employed by the data trackers that Ghostery users attempt to block. By deploying strategies that reconfigure web users as data providers that can be categorised, profiled, sorted and anticipated – not just on a single web site but across the web – these users become objects of a pervasive panoptical gaze from which, as participants have suggested, it is difficult (if not impossible) to escape. Conversely, Ghostery use can be framed as a 'tactic'. As De Certeau notes, tacticians do not enjoy the same powerful position as that of strategists. He writes:

> Lacking a view of the whole, limited by blindness… limited by the possibilities of the moment, a tactic is determined by the *absence of power* just as a strategy is organised by the postulation of power (1984: 39).

If we treat Ghostery, as users are asked to, as a 'window to the invisible web', its status as a window thus here becomes problematic. As participants explained, the control and insight that it affords is limited – it *is* a window, but like all windows, 'lacks a view of the whole'. Here then, the 'up yours gesture' that Gyrogearsloose describes is a tactic rather than a strategy.

Other participants used Ghostery as site of tactical resistance not directly against data trackers but against *other web users*. For example, Robkifi also alluded to the idea that though Ghostery may not be particularly effective, it is still worth using, in doing so 'you are probably left alone a bit more, because there's too many, say, even more naïve users than I am that will provide the

data that people are looking for'. Robkifi here suggests that resisting trackers requires positioning oneself against other possible data providers, thus implying that resisting for him is a highly individualised tactic. Such sentiments reveal that though Ghostery cannot offer any robust epistemic insights into data trackers, what it can do is offer a what to 'get ahead' of other users. In doing so Robkifi's testimony *becomes a kind of individualised response to a process of dividuation* – that is by employing his powers of individuality, he can sacrifice the other users identified and dividuated by data tracking. Such a response thus echoes the neoliberal underpinnings of personalisation explored in Chapter Two, wherein the 'networked individual' (Rainie and Wellman, 2014) is discursively placed at the heart of the web's current monetisation strategies. It seems in Robkifi's case that the networked individual can also become an uneasy site of resistance in the fight *against* such monetisation strategies.

Given that such tactics, as De Certeau suggests can only be partial against the panoptic strategies of data trackers, is resistance to data tracking futile? As Peacock (2015), Gillespie (2014) and Brunton and Nissenbaum's (2011) work highlight, in the context of data tracking, resistance is difficult to effectively mobilise because the epistemic uncertainties inherent in contemporary personalisation mean that it is hard to discern who or what to resist, when and how.[48] As such I agree with Gillespie when he states that in the face of information overload, users must at times resort to a belief that technologies can offer relief against ubiquitous dataveillance. He states:

> We want relief from a duty of being sceptical about information we cannot assure for certain. These mechanisms by which we settle (if not resolve) this problem, then, are solutions we cannot merely rely on, but must believe in (2014: 192).

[48] Scholars such as Barad (2007), Hardt and Negri (2012) and Best and Tozer (2012) have deliberated the forms of resistance that technologies might afford: Barad notes that technology does not pre-exist the 'dialectics of resistance or accommodation', (2007: 394), and Hard and Negri (2012) note that resistance can be found everywhere and nowhere – even in structures that uphold pre-existing power relations. Such responses suggests that resistance to data tracking is indeed possible, however in light of the epistemic uncertainties that data tracking creates, pinpointing the where to resist, how or when can be difficult.

I will return to this faith in technology in the face of algorithmic personalisation in Chapter Six, but for these Ghostery users, perhaps simply 'believing' in Ghostery, despite its epistemic shortcomings, offers a form of resistance that might be futile, but provides a form of relief against ubiquitous dataveillance nonetheless.

Privacy vs personalisation: the disconnect between invasion and convenience

As stated earlier, though Ghostery looks to reveal and block data trackers pivotal to algorithmic personalisation practices across the web, 'personalisation' is not a term mobilised on Ghostery's website or in its marketing materials. Conversely, the rhetoric of 'privacy' features heavily throughout the sites' front page and social media interactions.[49] It should not come as a surprise then that though many participants brought 'privacy' into our discussions of their own accord, most (though not all) were not immediately inclined to use terms such as 'personalised services' or 'personalisation'. However, though Ghostery use was not generally mobilised by participants through discourses of 'personalisation', most participants recognised that the data tracking they resisted was connected to algorithmic personalisation practices – practices such as behavioural profiling, cookie aggregation, targeted advertising and automated recommendation systems. For example, when Christopher (occupation undisclosed, country of residence undisclosed) was asked *'Why are trackers tracking you?',* he replied:

> The trackers are attempting to determine my interests and purchase history, and use that to specifically target me with advertising that aligns with my interests. The trackers themselves take my information and store it as cookies, or store information in the web logs used for regular reporting, use and sale.

A number of participants responded with similar answers that connected tracking with practices designed to generate income. For example, Mary stated that trackers 'are

[49] It is interesting to note that as exemplified in figures 2–6, the term 'privacy' seems to take a less dominant position on Ghostery's home page as the page as changed in last three years. Though I feel a thorough analyses of why this occurs is beyond the remit of this chapter (which is centred around participants engagements with the tool in 2013-2014), it seems possible that the down-play of 'privacy' on Ghostery's home page might be because their front page seems to be more and more driven towards their *commercial* clients (who are data trackers) rather than web users.

fundamentally trying to get money out of you somehow', whilst Robkifi stated that trackers were 'profiling you' for 'valuable' information, and Claire stated that:

> I think [trackers] are just harvesting up everything they can... I think they are going to sell products and try to work out how to sell me things and they are probably part of the NSA [Laughs].

Claire's comment, as her laughter suggests, was admittedly glib, yet she was not the only person to associate trackers with state surveillance, as I shall explore in the next section. Only Edward (occupation undisclosed, France) suggested that data tracking might be undertaken for the benefit of the user, rather than the corporation or the state; he stated that trackers were tracking individuals 'to get a better understanding of how people navigate on the site'.

Some participants, such as HelloKitty, Gyrogearsloose and Katherine claimed that they liked or did not mind the personalised services made possible through data tracking in some circumstances. HelloKitty said of personalised advertising and content:

> I like them, I like personalised content but only in such pages as Amazon... [the] 'Recommended for You' section has some other products I haven't seen that I didn't intend to buy but I'm just browsing, I get an extra idea of what's there according to what I like.

HelloKitty here then trusts Amazon to suggest products to her that she likes – she believes that they are successfully providing her with products to be 'relevant' to her interests. Similarly, Christopher stated of personalised advertising: 'I think it's better than non-targeted advertising, but I do not like being bombarded by any kind of advertising.'

Gyrogearsloose also stated that though he finds data tracking 'infuriating', he was not necessarily against algorithmically personalised services:

> I mean I don't have an argument with personalised advertising it's the fact that they're tracking you to gear that advertising and that what annoys me.

There seems to be a disconnect here between Gyrogearsloose's treatment of algorithmic personalisation and his attitude towards data tracking – Gyrogearsloose finds personalised

advertising innocuous, but the data tracking *in itself* is annoying. However, considering that, as Chapter Two outlines, data trackers do not just 'track', they also seek to anticipate and act on users by personalising their experiences (in this case through advertising), then this statement seems to be something of a contradiction in terms. The embrace of algorithmic personalisation practices at the very same moment as advocating privacy protection to me highlights why public debates need to go beyond privacy to explicitly interrogate user anticipation; if not, this disconnect – between enjoying personalised services yet finding the data tracking practices on which these services rely invasive – cannot be fully worked through and addressed.

The data-for-services exchange

To return to HelloKitty's response, though HelloKitty expressed a positive attitude towards algorithmic personalisation in some circumstances, Yoda, her partner who was interviewed alongside HelloKitty, took up a much more ambivalent position. Yoda first stated that he felt algorithmically personalised content was 'sometimes alright', yet he quickly highlighted the problems he had with some forms of personalised content. As a couple that described themselves as 'marketers-to-be' – at the time of the interview they were planning to use social media to start a marketing campaign for their up-and-coming business – they recognised that personalisation could be both convenient for web users as customers and yet presented a number of problems surrounding privacy, informed consent and control. Despite, or perhaps because of, these tensions, Yoda did not dismiss algorithmically personalised content as inherently wrong, but did signify the importance of 'boundaries':

> There's a limit, as in, as a marketer-to-be, or whatever, from the marketing perspective, I mean was also try to get personalisation and help the customer to, OK we'll provide the best environment for the customer and the experience for him or her to make a sale... on the other hand [marketers] need to understand there's a boundary where people just need to be left alone.

Yoda's recognition of the efficiency of algorithmic personalisation is worth highlighting – there are times when the practices used to track users and anticipate them are beneficial to the users,

for example by speeding up an online purchase by storing a user's account information, or by providing 'relevant' recommendations that build on a user's pre-existing search histories or preferences. Even critics of personalisation acknowledge such benefits; for example Bodle states 'the personalised web can provide convenience, efficiency, interestingness and relevance to users who are served with content that they themselves generate' (2015: 13).

However as noted in Chapter Two, even when personalised services *do* seem to provide relevance, efficiency and convenience, the implications of this success can still be critically interrogated. The reductive implications of personalisation on universal and collective consumption (Pariser, 2011; Kant 2015) evidence this, as does Bodle's assertion that 'personalisation services benefit advertisers more than users' (2015: 132). Bodle's observation is reflected in Yoda's attitude towards Google's Autofill service, which uses a users' individual search history to personalise search results. He stated:

> If I'm going to go in [to a website], I'm going to search for something, and I would prefer to actually search it, instead of having it served somewhere, not because I like typing on a keyboard, it's because, why would, I just feel, I'm a freak, why would you have, why on earth would you, I know it's for my convenience at the end of the day, but the fact of the matter is I know it's not for *my* convenience, it's for *your* convenience... and I don't like it one bit.

Yoda's cautious, self-perceived 'freakish' response towards Autofill exposes a duality embedded in its functionality as a personalised service; that is, they are not only designed to offer efficiency to the user but they are efficient to the provider in that they are designed, either explicitly or implicitly, to generate income. This might be an obvious point, but for Yoda and for a number of participants this duality revealed an ambivalent engagement with algorithmically personalised services, especially in relation to the data tracking that all participants sought, through their very use of Ghostery, to resist. Yoda feels that he is acting irrationally when he rejects the convenience of Autofill ('I'm a freak, why would you, why on earth...'), not because he prefers the seemingly unnecessary extra labour of 'typing on a keyboard' when Autofill could easily complete his search request for

him, but because he believes that the Autofill function is not just convenient for him, but convenient too for Google. Yoda's problem with this is rendered apparent in the following exchange:

> Yoda: Most people can't understand how big big data is, they just cannot understand that. And how a third party can be sold on third party.
>
> HelloKitty: Yeah we sell ourselves.
>
> Yoda: Because in the end, we are the product.
>
> *Interviewer: It might sound like an obvious question, but you guys aren't comfortable being the product?*
>
> Yoda: Well, if I were to be a product, I would've first of all liked to know about it, and second of all I would like to agree on it.

Thus, Yoda's status as a 'product' problematises his engagement with the personalised services that he knows fuels the data tracking he seeks to resist – again notions of *knowledge* ('if I were to be a product, I would've first of all liked to know about it') and *control* through consent ('and second of all I would like to agree on it') become significant.

Yet these two problems surface through a third problem for Yoda and HelloKitty – that is, the commodification of the personal data which call them into being as not web users, but as products and also producers; they are the data providers that scholars such as Andrejevic (2011) and Fuchs (2010) claim are unfairly exploited through the extraction of value from their data trails. The value extraction that Yoda alludes to is not quite as simply summed up as unjust exploitation however – he knows he is being offered free and convenient services in exchange for his data; it is the lack of control and consent currently embedded in the conditions of his status as a 'product' that seems to cause the most ambivalence. Here then, the immaterial labour identified by Fuchs and Andrejevic starts to emerge, but is not explicitly framed as exploitation by these participants. Instead Yoda and HelloKitty accept that their

social interactions are being commodified, however their concerns lie on their sense of control (or rather lack of it) in the commodification process.

Other participants also made similar distinctions to Yoda's. For example, Mary was careful to make the distinction between unwanted algorithmic personalisation (such as that which was rendered possible by third party data trackers) and algorithmic personalisation practices to which she had explicitly consented. When talking about a form of personalisation she actively enjoyed – that is the recommended section of the GoodReads App – she states:

> [The Goodreads app] is something where I'm going out and I'm saying, I want to read books… it's not like they are pushing this as in sending me constant emails about it, ooo, have you considered such and such a book, I go to the website and I look at the recommendations, I am the one in control here… [Yet] Mostly it feels like when [other sites] are talking about making things personalised to you, it feels like what they are doing is not a service to me, it's a service to capitalism maybe.

Similarly, Katherine went on to make a clear distinction between the forms of data tracking she feels that she has consented to, and the types she has not:

> When you sign up for a free service, that's the choice you make, you go on Google and you sign up for an account, everything you do on Google, that is being tracked and they have this huge database and they know a lot about you. But that is a choice because they provide you with a service and you decide to do that. With all these trackers, you don't know that they are there, you don't know why they are gathering that information, they don't know what they are going to do with it and that is basically what bothers me.

Such sentiments thus suggest that data tracking is acceptable as long as it constitutes a form of 'exchange' for a free service – many users perceive being tracked is 'worth it' in exchange for free services, convenience, or other pay-offs that in some way benefit the user (Ofcom, 2015). The epistemic uncertainty inherent in data tracking again emerges as a factor in this exchange – that is, in some instances it is unknown what data participants are expected to relinquish, and more importantly what (if anything) they are getting in return. Furthermore, it is with *third party* data tracking that this exchange becomes especially problematic: the fact that there are no

front-end services explicitly being offered by these trackers, and no form of control over how these trackers anticipate users, renders the data-for-services exchange as inapplicable to third party data tracking, and therefore, understandably unwelcome by participants. Privacy advocates such as McStay have thus called for more transparency in third party tracking, since it is only through transparency that we can give informed consent. He states that 'if we freely and voluntarily consent, behavioural advertising is acceptable, if not it is not' (2012: 602).

This data-for-services exchange is one that arose in all three of my investigations, and it is an exchange that has been explored by many scholars such as Peacock (2015), Gillespie (2014), McStay (2012), Lapenta and Jørgenson (2015), Jordan (2015) and Bassett (2013). For example, Bassett points out, this exchange is unavoidable in that in underpins the entire online economy operating in the marketised internet:

> The contract is very clear; social media demands personal data donation as the price for full engagements in those forms of communication that are becoming intrinsic to everyday life and that increasingly shape it. This exchange is the central component of what has emerged over at least a decade and a half as the standard model of the commoditized virtual community of all kinds (2013: 4).

I agree with Bassett that this exchange is a central component of the web economy – as Chapters Two and Three stress, the user data collected in this contract is what makes possible the drive to anticipate users in the name of a 'personalised' web. However, I would contend here that participant negotiations in this exchange suggest that the contract is perhaps not always 'very clear' – though participants' accept *some* types of first-party tracking, they reject or challenged others.

In some ways these users' negotiations are understandable – with only limited 'tactics' available to web users against data trackers' 'strategies' (De Certeau [1984] 2002), the ambivalent and tentative acceptance of the data-for-services exchange might be the only viable option. I would argue however that users' acceptance of this contract is justified

through a logic of individualism that accepts data tracking as a form of commodified exchange: users will relinquish data if they feel it is convenient and beneficial to their own web consumption. The benefits of this exchange are therefore recognised even by these privacy-concerned participants, who through tense negotiation seem to grudgingly accept the contract as long as they feel that 'the price is right'. I will return to the ontological implications of accepting this tense and uncertain exchange in the concluding sections of this chapter; here though I want to briefly acknowledge Ghostery's *own* position as a commercial, data-driven service provider.

Ghostery's own data-for-services exchange

It is important here to consider Ghostery's own position, because it is a cost-free service that offers tracker blocking tools to its users *in exchange for data.* As some participants were aware, Ghostery is owned by Evidon, which performs data tracking practices on its own users. This takes the form of an 'opt-in' feature on Ghostery called 'Ghostrank', which tracks users as part of the privacy compliance packages that Evidon offer as a component of their commercial services. The tracking that Ghostery performs on its own users has been met by criticism, such as Simonite who points out that:

> Those who advocate Ghostery as a way to escape the clutches of the online ad industry may not realize that the company behind it, Evidon, is in fact part of that selfsame industry (2013: np).

Evidon has repeatedly defended themselves by emphasising the fact that Ghostrank is very-much 'opt-in' rather than 'opt-out' and that users are made fully aware that they don't have to use it. Interview discussions of Evidon's own data-for-services exchange produced a range of answers. For example Robkifi stated that:

> I don't know, if you want to do something like this right, you do need data, there's no way around it. But they present themselves a little bit, when I first encountered them they presented themselves more as a not-for-profit organisation that just offered to,

> more out of ideology than out of commercial motivations so I suppose it's a little bit disappointing that that's not the case. But then again I'm not too bothered by that.

Chris, Katherine and Claire pointed out that it could be seen as hypocritical, or at least counterproductive, that Ghostery seeks to collect this data, yet Claire and Katherine, like Robkifi, felt this was understandable in order for Evidon to make profit to provide them with a free service. Other respondents such as Katie (activist, UK) actually decided to stop using Ghostery after finding out that they were owned by Evidon; for Katie, Ghostery's commercial affiliations resulted in the decision to reject their services altogether.

Most tellingly*, all participants decided not to opt-in to Ghostrank*. This included respondents who felt that Evidon's need to generate profit from Ghostery was understandable. Here then, Ghostery in itself represents a site of uneasy negotiations for its users in that, even in the act of tracker blocking itself, they must weigh up the risks and benefits of exchanging certain types of data for a free service. Again the individualistic logic of choosing to opt-out of services that rely on the data of other web users is here implied; if *all* users decided not to opt-in to Ghostrank, then Ghostery would potentially not be available as a free service that these participants enjoy. Such tactics are understandable for these participants who feel increasingly powerless in the face of data tracking – in a tactical environment that limits resistance to data tracking, highly individualised responses might be the only option. Yet, the choice to protect themselves as individuals is a telling indication that the services-for-data exchange that underpins so many free-to-use services must be confronted and negotiated in all kinds of situations, even in the act of resisting data tracking itself.

The sum of 'knowledge' and 'control'? Personalisation and formations of the self

> *You can no longer choose to present yourself to the world, because you can't hide all the scuzzy bits.*
>
> (Chris)

As previously mentioned, due in part to Ghostery's own framing of their add-on, 'privacy' was discursively pre-established as the primary vernacular through which to discuss participants' engagements with tracker-blocking. It therefore seemed important to spend some times during interviews on the subject. However, the question of *if* privacy mattered to participants was already settled; the very act of installing Ghostery is a clear indication that to Ghostery users, online privacy matters. The question then was not *if* privacy matters, but to *what extent* did privacy matter? *Why* did it matter? And finally, given the context of my research, *how* does privacy matter in the context of personalisation?

For all participants, the third party tracking that Ghostery exposes was unequivocally – and unsurprisingly – posited as unwelcome; data tracking is 'disturbing' (Mary), 'evil' (Christopher), 'quite horrifying' (Claire), 'annoying' (HelloKitty), 'infuriating' (Gyrogearsloose), 'shocking' (Katherine) and even '*unheimlich'* (Robkifi). However, though privacy from data tracking mattered to all participants to some degree, the reasons given for why privacy mattered were more varied. As mentioned, the Snowden scandal was around six months old when interviews for this study took place, and Gyrogearsloose, Participant, Claire and Chris all mentioned Snowden in their discussions of privacy. For example, when asked to what extent data tracking effects his privacy, Gyrogearsloose answered:

> I think [data tracking] is highly invasive but it's so subtle that frankly, you know, until Edward Snowden came out with his revelations I think people were subtly aware that it was going on but I think Snowden has made it clear just how extensive tracking is.

Furthermore Gyrogearsloose told me that Google and the NSA as 'probably on equal footing in terms of one being as bad as the other'. Similarly Claire speculated that data trackers are not only 'trying to sell something' but that were 'also probably part of the NSA'. Furthermore during an exchange regarding *commercial* data trackers and their attempts to anticipate users,

Chris stated in response to my question of 'what's wrong with being anticipated by commercial data trackers?':

> What's wrong with being anticipated? … because then we go into the realm of thought crime, of people, that are being arrested or can potentially be arrested er for their thoughts because their thoughts are considered, they're considered to be anti the state.
>
> So due to all this discussion recently of GCHQ etc etc by Snowdon, there's been a redefinition of the terrorism act and now I'm not sure, don't quote me on it that it's been redefined because of Snowden but there's a clause in there that extremist behaviour is anything which is a threat to the state.

The conflation of state and commercial surveillance by Gyrogearsloose, Chris and Claire is understandable given that Snowden's revelations uncovered the extensive co-operations of commercial parties such as Google, Microsoft, Skype and Yahoo with state forces. However, it is worth highlighting that Ghostery claims only to block *commercial* data trackers: nowhere on its site does it claim to aid users in their fight against *state* surveillance. Nonetheless, Snowden is invoked here as a kind of touchstone in the fight against both state *and* commercial dataveillance.

Here then the Snowden revelations seem to mark a historically-specific 'moment' in the turn towards totalitarian surveillance; as aforementioned scholars such as Lyon (2005) Lovink (2016) and Seeman (2014) claim we now live in 'Post-Snowdon' state of surveillance. However comparable moments of the totalitarian surveillance have been publicly marked and invoked before – for example Bassett points out a similar conflation of state and corporate surveillance in the aftermath of 9/11 and the London Bombings (2007). In some ways then, the relation between corporate and state surveillance is nothing new, and scholars such as Delueze (1999) and Bassett (2007) have deliberated the conflation of state and corporate surveillance as a kind of totalitarian regime wherein commercial surveillance tactics are deployed to fix and govern the subject.

I want to ask here: what kinds of distinctions/conflations were made by participants in response to state and commercial dataveillance? Were participants protecting themselves from state or corporate surveillance, or both? Finally how did they frame 'themselves' as subjects that must be protected from data tracking?

To answer these questions I think it is first useful to turn *why* privacy mattered to them when they surfed the web. When asked why privacy matters in relation to data tracking, Gyrogearsloose replied:

> The primary response to that is principle, I mean a Peeping Tom is subtle too but you don't really want somebody looking in your window.

Thus privacy for Gyrogearsloose is understood as a principle that must be upheld – both online and offline. Similarly, Participant framed privacy as a right that is being undermined by corporate and state dataveillance practices. They stated when asked why privacy matters:

> Who in his right mind would question political privacy and secret ballot? Same goes for online privacy... If I have the right to vote in secret every so many years, I demand the right to live on and offline in private.

Here then privacy is treated as a 'right' or 'principle' that must be upheld. Claire and Katie also framed privacy as moral right or principle; for example Katie told me that 'what you do on your own computer is your own business, that's your right'. Lynch (2013) states that this mindset is reflected in popular discourses surrounding online privacy. He writes:

> [Public framing of data tracking] makes sense if you understand privacy solely as a political or legal concept. And its political importance is certainly what makes privacy so important: what is private is what is yours alone to control, without interference from the state (2013: np).

Treating privacy as a political or legal 'right' is clearly valuable in protecting the sovereignty of citizens, however in this framing the question of *why* privacy matters remains somewhat

unanswered: that is, an individual might have the right to privacy, but *why* do they need this right?

In many ways this is a highly complex question that is specific to different socio-cultural contexts: for example, as McGeveran recognises, 'privacy' means different things depending on European or US interpretations of what is legally and ethically meant by the term (2015).[50] Though an in-depth interrogation of the difference in how privacy is discursively constructed by nation-states lies beyond the scope of this exploration of algorithmic personalisation, I would like to highlight that both US and European conceptions of privacy are founded on the premise that 'the concept of privacy is… intimately connected to what it is to be an autonomous person' (Lynch, 2013: np). That is, privacy in relation to legal or political principles protects the rights of the individual to form a unique and autonomous selfhood (Lynch, 2013; Rose, 1991).

To elaborate, Lynch draws on wider and well-established philosophical concepts of the self – some of which are outlined in Chapter Two – to argue that to lose the capacity and space to think private thoughts means to lose the space to form an autonomous personhood away from the prying eyes of another. Lynch proposes that to be subject to the ubiquitous and pervasive gaze of another means to be objectified, 'dehumanized', and ultimately controlled and regulated by that gaze. Specifically in relation to the contemporary data tracking practices which Ghostery attempts to resist, Lynch notes that:

> [W]e would do well to keep the connections between self, personhood and privacy in mind as we chew over the recent revelations about governmental access to Big Data… To the extent we risk the loss of privacy we risk, in a very real sense, the loss of our very status as subjective, autonomous persons (2013:np).

[50] McGeveran highlights that the EU and US have strikingly different privacy laws; in the US, privacy laws are based on the idea of individual freedom to act without encroachment from state or commercial interventions, whilst the EU based its privacy laws on the premise that an individual has the right to protect and control information about themselves. McGeveran argues that this difference has led to legislation that treats privacy as a fundamental human right in the EU, whereas in the US privacy is geared more towards freedom of commercial interest (2015).

Though not expressed in the same terms, participants such as Chris, Mary and Robkifi echoed Lynch's sentiments that privacy is a matter of maintaining, protecting and securing one's personhood. For example, Mary talked of the detrimental effects that 'erroneous' data compiled by data trackers can have on an individual. Speaking about online behavioural profiling, Mary stated:

> I mean if some erroneous data point gets in there… [or] somebody has built a portfolio about you and your name resembles somebody else's name… or you have a job interview and somebody thinks that you stole something at some point because of some erroneous piece of information that somebody has stored about you, but you have no idea that's going to happen… you have no way of saying, of correcting these things.

Here then, Mary expresses concern that data trackers might *mis*-identify and *mis*-profile her – that is, the 'algorithmic identity' constituted through data tracking incorrectly represents her 'true' and 'correct' self. Similarly, Robkifi stated that commercial data tracking in the name of personalisation has implications for his individuality. He stated of profiling by advertisers:

> You feel uncomfortable, [people] are being made predictable, only, because people with your profile use.... Apple Shampoo, that doesn't mean that you want it, and if that's being pushed on you then that's not right... There's a chance of your individuality being eroded I suppose.

Though Robkifi emphasised that 'your individuality being eroded' was a strong way of putting it (he said 'if you want to make a thing about it'), he suggests that data tracking and personalisation practices might result in his 'individuality' being diminished. Finally, Chris framed privacy in a way that very much reflects Lynch's primary argument:

> There's a definition of privacy and one of them is it's the way we selectively present ourselves to the world, so of course [data tracking] stops that, you can no longer choose to present yourself to the world, because you can't hide all the scuzzy bits.

Chris poignantly reiterates that:

> [Data tracking] takes away your agency... the fact that people can monitor everything your do takes away your ability to be you in a sense.

There are a number of points I want to make about Chris, Robkifi and Mary's framing of selfhood. The first is that these responses go beyond simply framing privacy as a 'right'; for Chris, Mary and Robkifi privacy in relation to data tracking is about protecting one's personhood from being misprofiled, eroded or 'taken away' by the ubiquitous gaze of dataveillance. Here then data tracking and algorithmic personalisation becomes a kind of force from which a user's sense of self must be protected. This to me suggests that the anxieties created by algorithmic personalisation are not just epistemic in that users cannot 'know' what data is being tracked and how they are being anticipated, but are also *ontological* in that users' sense of self is open to destabilization or erroneous reconstitution through algorithmic personalisation.

The second point I want to make here relates to *how* Chris, Mary and Robkifi frame themselves as individuals. The participants' sentiments that the self must be protected echo Lynch's argument – but they also configure the self as an entity that *pre-exists* the data tracking process and which can be kept from the data tracking network. For example, Chris and Mary's words especially suggests that this pre-existing self is internal – Mary has a 'true' self that can be misprofiled, whilst Chris has 'scuzzy bits' that can and should be hidden. This existence of an inner, pre-existing and even 'true' self, as Chapter Two explores, has its roots in Cartesian models of the self that have persisted for many centuries – as Lynch himself states, though many of Descartes' theories of consciousness have long been rejected, 'the idea that the mind is essentially private is a central element of the concept of the self' (2013: np).

Conclusion: dividuated data-tracked subjects

As also outlined in Chapter Two, the Cartesian model of the self as inner, pre-existing, stable and holistic has and can be challenged; Butler and Stone's work on performative identity constitution contests that the self is not inherently inner or pre-existing but is constituted by and through a discursive framework. I will explore this idea of identity constitution in the next

chapter but here I want to conclude by considering Jordan's model of networked privacy in relation to social networks. Jordan (2015) notes that on social networks, the self is invoked both as an entity that pre-exists the network and is brought into existence by the network. To apply this theory to my analysis here, the participants seem to be invoking the *former* model of the private self – that is, these participants are protecting their 'inner core' (2015: 126) from the threat of data tracking – they frame themselves as 'complex private beings… parts of which they are reveal or forced to reveal' (2015: 128). Jordan makes an important about this conception:

> The core of a person is something that may be inconsistent, changeable and negotiated, it may be part of decentred subject, but it is still the complex inner core of a subject. Privacy in this conception is not the presumption of a self-consistent inner identity but of a complex inner identity that yet still remains each individual's to dispose of (2015: 123).

Such a formation 'presupposes that a being exists prior to being read' (2015: 128), rather than the self coming into existence through visibility. I will explore this further in the next chapter, here however I want to emphasise that these participants frame the self as an inner, private formation that must be protected from the dehumanizing threat of data tracking. What was articulated as an epistemic anxiety of not fully knowing the extent and reach of your own data trail emerges too as an ontological concern: that is, uncertainty over anticipation throws security of selfhood into question.

The final point I would like to argue is that this model of the self as inner and pre-existing is complicated if we consider the differences between state surveillance and commercial dataveillance. Take for example Bolin and Andersson Swartz's theory that unlike traditional ways of 'knowing' a media audience through demographic profiling of age, gender, etc., algorithmic profiling is more interested in 'real-time', recursive and correlational behavioural patterns, which then get *translated back* into traditional audience demographic categories (2015). Bolin and Andersson Swartz make explicit that traditional individual profiling helps to maintain and perpetuate traditional models of state surveillance. They state:

> If the advertising industry and advertising-based tech companies such as Google have an ambivalent and complex relationship to [traditional demographic] categories, government security agencies definitely *do* care about the specific individual (2015: 9).

To elaborate, state surveillance tactics 'works in the reverse compared to market surveillance' (2015: 9) by looking for *individualised* threats rather than *dividualised* patterns of consumption. Thus, the formations of selfhood that state and commercial dataveillance constitute and demand can be considered to be quite different – one looks to demographically profile the individual, the other looks to correlate the web user as a dividual in a mass data set.

In conclusion, I propose that these participants' framing of the self as pre-existent, inner and private largely correspond with traditional modes of profiling and by extension state models of surveillance, which traditionally seek to individually identify rather than dividuate. This framing of the self as an entity in which one must protect your 'scuzzy bits' if you are to remain 'you' somewhat ironically corresponds to Zuckerberg's rhetorical, neoliberal idea that 'You have one identity' – the difference being for these participants that this 'one identity' should not be expressed through the network, as Zuckerberg claims. And yet this model of selfhood exists in tension with the other formations that algorithmic personalisation demands; that is, a self that is not only fixable and inner but can be continuously and recursively expressed and reworked, as I explore in the next chapter. As such, adding 'personalisation' into Ghostery's rhetorical sum of 'knowledge + control = privacy' reveals complexities and nuances regarding how the self is constituted by and through commercial data tracking in the name of personalisation, and how the self is framed by Ghostery users themselves.

Chapter Five

'Spotify has added an event to your past': (re)writing the self through Facebook's autoposting apps

'The film you quote. The songs you have on repeat. The activities you love. Now there's a new class of social apps that let you express who you are through all the things you do'

(Facebook Timeline, 2014).

Part I

Introduction: personalisation and performing the self

The last chapter sought to explore Ghostery users' negotiations with data tracking and algorithmic personalisation in relation to users' ideas of privacy, control, epistemic knowledge production and the 'protection' of selfhood against data tracking. This chapter shifts focus towards algorithmic personalisation in relation to identity performance – and in particular identity performances that are anticipated and intersected by computational systems which seek to act *for* (and indeed *on)* the user. To do so the chapter focuses on the 'autoposting' activities of Facebook's third party apps – that is, commercial applications that can automatically post Facebook status updates on the user's behalf, and in doing so are discursively framed, as the above quote highlights, as tools that aid user self-expression. However, as this chapter proposes, if the accounts of Facebook users themselves are taken into account then such apps can be considered as personalisation practices which do not just 'aid' self-expression but can be deployed as actors capable of (re)writing users' identity performances on Facebook – and beyond.

What is a Facebook third party app? As Zuckerberg explained during the 2014 F8 conference,[51]

[51] Facebook Inc.'s international developer conference.

third party apps are commercial lifestyle, gaming, entertainment and shopping applications designed to be 'deeply integrated' into Facebook's operational and commercial 'ecosystem' (Zuckerberg et. al, 2014). As Zuckerberg repeatedly emphasises, these apps play an essential role in Facebook Inc.'s newest expansion strategy – that is, to become a 'cross-platform platform' (Zuckerberg et al., 2014) that connects not just friends, family and acquaintances but the millions of platforms, websites, 'stacks' and services that currently constitute the web. To date, the external products and services that apps integrate into Facebook include (but are not limited to) games, movies, books and music services, ticket and product purchasing programs, bookmarking software, photo editors, health and fitness trackers, events managers, comic strip creators, lifestyle forums, interactive cook books and stress relief programs – there are over seven million apps available on Facebook (Stasticbrain, 2016), which generate an income of around $3 billion a year for Facebook and its third party associates (Zuckerberg et al. 2014).[52]

In situating Facebook as the 'cross-platform platform', Facebook apps have also apparently created more opportunities to facilitate user self-expression. Rolled out in 2011 along with Timeline, Facebook's newest profile manifestation, apps were pitched to users as 'the perfect way to express who you are' (Zuckerberg, 2011). As the introductory quote of this chapter suggests, apps are discursively framed by Facebook as tools that let users articulate – and more importantly publicise – 'who they are' by accommodating any user lifestyle preference, 'interest token' (Liu, 2008), socio-cultural taste, consumer choice or even affect; 'your runs, your bike rides, your cooking, your eating, your sleeping, *your happiness*, your fashion, anything you want'

[52] Third party apps are not the only 'applications' incorporated into Facebook – Facebook itself also uses many internal 'applications'. For example Facebook Messenger and News Feed can both be considered to be apps in that they are 'software designed to do a specific task' (Fagerjord, 2012: 2). In focusing on third party apps here I do not mean to suggest that Facebook first party apps are not important to how identity performance plays out on Facebook – Facebook's internal applications can be critiqued as both facilitators and regulators of user self-expression (as noted in more detail below). However, it is third party apps that take the interest of this chapter because i. these apps have the ability to automatically post on a user's behalf and ii. The apps allow for cross-platform connections – they are used to carry massive amounts of data produced and consumed by users between 'integrated, monopolistic outlets' (Fagerjord, 2012: 4). As I contend throughout this chapter these two attributes (which apply only to third party apps) raise of host of fresh critical questions in regards to identity expression and constitution.

(Zuckerberg, 2011, my emphasis). Consequently, in order to promote and secure this cross-platforms ecosystem, users are encouraged to 'express themselves' by connecting their favoured pre-existing services (such as the music streaming app Spotify or TV and movie service Netflix, established prior to Facebook's app network) or newly-developed apps through and to their Facebook accounts, and in doing so secure a frictionless yet sticky connection between Facebook and the app. Facebook claim that this connection is beneficial to users as it conveniently circumvents the labour of having to 'sign up' or 'log in' to the app (Facebook App Centre, 2014).

However, Facebook third party apps were not just rolled out as aids for self-expression – they were also celebrated for the ability to publicise and amplify those self-expressions through their ability to automatically post status updates *on a user's behalf*. Differently put, Facebook's third party apps have the ability to post automatically published status updates (herein referred to as 'autoposts') to an individual's Facebook friends network, at times without their knowledge or immediate consent (at the time of posting). Autoposts by apps can take on a number of forms, but most refer to an in-app action or achievement by a user and are written on behalf of a user in first or third person; for example, 'xxx xxxx is listening to Serious Time by Mungo's Hi Fi on Spotify', 'Batman & The Flash: Hero Run - I've just scored 22,323 points!' or 'I've just run 5.99 miles on MapMyRun' (see figure. 7).

It is the ability of these apps to 'express' on behalf of the user some utterance of identity that relates to the central concerns of this chapter. This is because the capacity of apps to autopost in the user's stead means they have the ability to autonomously *act* on behalf of the user; an attribute which, as the Introduction chapter and Chapter Two emphasise, is a key component of algorithmic personalisation. Although autoposting constitutes a somewhat 'crude' example of algorithmic personalisation in that only a user's name and profile picture are tracked and

mined,[53] autoposting presents a valuable site of investigation in relation to personalisation because in this instance what is being algorithmically 'personalised' is a user's very own identity performance. By this I mean that in automatically posting status updates such as 'I've just run 5.99 miles on MapMy Run' to a Facebook user's friend network, autoposting apps constitute a moment of user anticipation that actively intervenes in a user's identity articulation and performance on Facebook.

Not long after rolling out third party apps it emerged that autoposting was overwhelmingly unpopular with the majority of Facebook's users. After admitting that 'people often feel surprised or confused by stories that are shared without taking an explicit action' (Facebook blog, 2014), Facebook is now downplaying the significance of autoposts in users' activity – autoposts now predominately take place in users' Tickers, rather than the New Feed itself, and Facebook have tightened its regulations to ensure that users are not forced to consent to autoposting as a part of the terms of use for an app. However at the time that participant interviews for this investigation took place (between March and June 2014), most of these measures did not exist, meaning that autoposts (though still fairly rare) were not as infrequent as they are now. The transience of autoposting should not be taken as a reason to dismiss its critical significance: on the contrary, as I will argue throughout this chapter, the very ephemerality both of specific instances of autoposting and autoposting as a wider socio-cultural practice warrants critical interrogation.

The ability of apps to algorithmically write in the user's stead, as well as connect *across* platforms, gives rise to a host of fresh critical questions: what does it mean to use apps as tools

[53] This is not to suggest that Facebook apps only mine a user's name and profile picture as part of their data tracking process – many apps actually harvest a huge amount of user information, such as a user's Facebook 'likes', hometown, friends list, any other socio-cultural interests, occupations or religious/ political beliefs the user has registered on Facebook (Online Permissions, 2015). However, this information is used in the 'back end' anticipation of users explored the previous chapter – this information is sold on, or used to target users for advertising purposes in or outside of the app, rather than part of the autoposting process.

for self-expression? What does it mean for an app to automatically yet unintentionally give away our 'guilty pleasures' to our online audiences – our 'trashy' song preference or our pornographic pleasures? What kind of self can be constituted and performed under the logic of personalisation? Furthermore, if we treat the articulation of selfhood on SNSs as a performative act (as I explore further below) – that is, if as Cover proposes, 'the establishment and maintenance of a profile is not a representation or biography but performative acts, which constitute the self and stabilise it over time' (181: 2012) – then what does it mean to a have an app algorithmically perform an act of selfhood as part of users' Facebook activity?

Figure 7. Examples of autoposting by Facebook third party apps.

Drawing on the accounts of sixteen Facebook users, this chapter explores autoposting as a socio-technical practice that creates critical implications in regards to performative articulations of user identity. Here I use 'performative' in the Butlerian sense; that is, that expressive utterances deployed by apps (in the form of autoposts) can be considered as acts that discursively 'enact and produce' the subject which they name (1993: 13). The theoretical framework of identity performance and constitution contained in this chapter (and in Chapter Two) underpins a qualitative methodology that attempts to get at how users engage and negotiate autoposting apps in everyday life.

As the following sub-sections explore, participants recounted a number of complex, tense and often unwilling encounters with autoposting apps on Facebook – including apps disclosing 'guilty pleasures' such as trashy songs or sexually suggestive content to participants' Facebook friends, Spotify 'adding an event' to a participant's 'past' and the framing of other people's

game app posts and invites as 'chavvy'.[54] Participants' accounts suggest that in many instances, autoposts by apps work to intervene and at times disrupt the carefully staged identity performances that users commonly enact on Facebook (Van Dijck, 2013). By considering critical notions such as 'context collapse' (boyd and Marwick, 2011), 'taste performance' (Bourdieu, 1984; Liu, 2008) and 'grammars of action' (Agre, 1994), I will argue that apps function as not just *tools* for self-expression, but as unwanted *actors* in the writing and performing of selfhoods on Facebook, in ways that complicate Zuckerberg's assertion that Facebook users' 'have one identity' (cited in Van Dijck, 2013).

Identity, performativity and articulations of the self on SNSs

As Chapter Two proposes and as Marwick (2013), van Zoonen (2013), Karppi (2012) and van Dijck (2013) note, contemporary SNS sites predominantly demand not only that users are identifiable and nameable but that they 'have one identity' (Zuckerberg cited in Van Dijck, 2013). As noted in Chapter Two, this idea reflects traditional Cartesian models of selfhood, yet many scholars have challenged this unitary and singular approach to identity formation. For example, Van Dijck states:

> The mantra of people having one authentic or 'true' identity… betrays a fundamental misjudgement of people's everyday behaviour. Ever since Goffman, it is commonly accepted that people put on their daily lives as staged performances where they deliberately use the differentiation between private and public discursive acts to shape their identity (2013: 212).

Despite these assertions that identity construction consists of a 'staged performance' rather than a single or 'authentic' identity, Facebook insists that their tools – such as apps – can assist users in 'expressing who they *are',* implying that users do not 'perform' their identity on Facebook; they *are* the selves they portray on Facebook. Marwick argues that Facebook's emphasis on a unitary, singular identity is driven by profit. She writes: 'the move to commercial social software such as social network sites, blogs, and media-sharing services has brought with

[54] 'Chavvy' is an adjective of the word 'Chav', which OED defines as 'A young lower-class person typified by brash and loutish behaviour.' (2016)

it an impetus to adhere to a fixed, single identity' (2013: 368). Though I agree that Facebook *discursively* emphasises the 'one identity' approach to the formation of selfhood, the assertion that commercial gain drives this approach is problematised if contemporary algorithmic personalisation practices are taken into consideration – that is, the drive to indefinitely track, recursively anticipate and act on the user somewhat complicates the idea that a fixed and stable identity is the most profitable for the platform. After all, if a user's fixed and stable identity was a commercial priority then the need to anticipate the user across platforms and on a daily basis would not be necessary. I will return to this idea throughout this chapter but here I would like to emphasise that the participants' testimonies explored below suggest that their identity performances certainly do not fit the 'one identity' model, despite Facebook's discursive construction of identity as a single, verifiable self that can – and indeed *should* – be expressed via Facebook.

It seems important here to briefly clarify what can be meant by 'identity performance'. As the quote by van Djick above suggests, Goffman's (1959) theory that identity articulation can be considered a performance – that changes depending on the socio-cultural context and intended audience – have sought to challenge established Cartesian notions that identity is 'inner', unitary, whole and stable. Though I join Goffman in asserting that identity can be performed in multiple and context-specific ways, in terms of this chapter (and to a lesser extent this thesis as a whole) I am focussing on Butler's crucial intervention into identity theory – and specifically her proposition that identities are not just performed but also 'performative'. As detailed in Chapter Two, for Butler acts of identity performance are ascribed via discourse and therefore constitutive of the very identity that they seek to perform – the self is 'constituted in social discourse, but that ascription of interiority is itself a publicly regulated and sanctioned form of essence fabrication' (1988: 528).

In considering identity performances as performative it is possible to theorise, as scholars such

as Cover (2012), Bassett (1997), Jordan (2013) and Stone (1997) have, how articulations of identity on SNSs – and the 'material performatives' (Jordan, 2013: 53) that produce such articulations – might not just be expressive but productive. I will examine the role that *automated* identity articulations (such as autoposts) play in this process in the next section, but here I want to emphasise that in considering identity performances on Facebook as performative it is possible to begin to think about how articulations of selfhood on Facebook might not just represent the self, but actively constitute the self.

What possibilities does Facebook as a platform provide for the performance of user identity? As scholars such as Sauter (2013) note, a plethora of potential 'technologies of the self'[55] (Foucault, 1988) are embedded within the operational structure of Facebook: status updates, videos, uploading photos, sharing links, location tagging and 'likes' (amongst other functions) all have the potential to facilitate facets of user self-expression. Though advocates such as Miller (2010) celebrate the articulation of user self-expression on Facebook as emancipatory, scholars such as Marwick (2013), Cover (2012), and Janier (2010) note that Facebook's attempts to determine users interests can be critiqued as standardising and restrictive. For example Marwick states that:

> Facebook profiles cannot be altered and thus all adhere to the look and feel of the site. As a result, user customization is restricted primarily to filling out predefined fields, such as favourite books, music, television and films (2013: 14).

Such criticisms highlight the homogenising influence of commercial interests on profile pages that work to restrict the modes of self-expression available to users of SNSs. These critiques suggest that Facebook's operational architecture may provide a means for users to express

[55] Foucault describes 'technologies of the self' as those 'which permit individuals to effect by their own means or with the help of others a certain number of operations on their own bodies and souls, thoughts, conduct and way of being, so as to transform themselves in order to attain a certain state of happiness, purity, wisdom, perfection or immortality' (1988: 18). It seems important to note that these technologies are not just tools but also techniques – Foucault notes that reflection, penitence and self-disclosure as well as practices such a diary writing all constitute socio-historically specific operations of self-constitution/ expression. Therefore the 'technologies of the self' that Facebook offers are not just the tools (for uploading photos etc) but also the operations for disclosure, articulation and 'self-knowing' (Foucault 1988: 23) that these tools permit.

themselves, but do so under a technological regime that restricts the construction of identity to normative, regulatory and commercially viable frameworks. Furthermore, Software Studies theorists such as Agre (1994) and Kitchin and Dodge (2011) have proposed that such computational frameworks could have performative effects for the users that 'act' through them. Agre's 'grammar of action' model proposes that the implementation of computational architectures such as Facebook can 'constitute that reorganization of… existing activity' (1994: 11) suggesting that self-expression can be rearticulated, and therefore regulated, to fit the computational grammar embedded into technological frameworks, networks and interfaces. Through such grammar, as Karppi states, 'impressions of the self are built according to the platform' (2012: 293); or as Law puts it, such computational designs 'configure the user' (1991).

The expressive potential of autoposting: considering apps as actors

Can apps offer a way *out* of the restrictive grammars that Facebook impose on its users? Echoing the arguments outlined above, Gerlitz and Helmond argue that Facebook's 'like' and 'share' buttons commonly used to connect platforms, individuals and services (not just on Facebook but outside the platform) currently afford users a very limited 'horizon of possibility' (2013:1353) that only allows for the expression of positive – rather than negative or critical – sentiment.[56] They speculate that apps might expand this horizon of possibility, as apps facilitate an expressive framework that extends beyond merely being able to 'like' or 'recommend' something. They note that:

> [W]hen creating an app, developers are prompted to define verbs that are shown as user actions and to specify the object on which these actions can be performed. Instead of being confined to 'like' external web content, users can now 'read', 'watch', 'discuss' or perform other actions (2013: 1353).

[56] In early 2016 Facebook introduced five new buttons to accompany the established 'like' button on Facebook itself (which include a heart and 'emojis' of crying, shocked and angry faces). These new buttons do slightly extend the expressive spectrum allowed on Facebook (though the extent to which these buttons facilitate 'critical' expression is still very much arguable), however in addition third party apps continue to contribute to the expressive network in and beyond Facebook. It is also important to note that at the time of interviews for this project (mid-late 2014), only the 'like' button was available to users.

The existence of over seven million apps certainly suggest that apps allow users to 'express who they are' by accommodating forms of expressive action that to go beyond simply 'liking' – and furthermore seem to offer forms of expressive potential that transcend the boundaries of Facebook. However, Gerlitz and Helmond highlight that 'automatic posts' by apps – that is, the autoposts that are the focus of this chapter – may problematise the expressive potentials of apps:

> These new apps come with the controversial feature of frictionless sharing and automatically post performed activities to the ticker once users have signed up (2013: 1353).

The ability of apps to autopost on a user's behalf on friends' Newsfeeds or Tickers[57] certainly has sparked controversy amongst Facebook users – as mentioned, Facebook is phasing out the practice due to its unpopularity. Participants of this study echoed these sentiments – though many participants enjoyed using apps, experiences involving autoposting were overwhelming negative, as I will shortly explore. Furthermore, if the 'performed activities' of apps are taken as performative acts, then autoposts take on a far more profound significance than just being confusing. In being considered as technological actors rather than tools, apps (through autoposting) take on a performative power to actively constitute the self that they supposedly only aid in expressing.

Is worth briefly clarifying here what is meant by 'technological actor'. Though Butler distances her theory from the term 'actor' because its 'theatrical resonance' might suggest that performativity is a 'Goffmanesque project of putting on a mask or electing to play a role' (1998: 285), other theorists such as Barad (2007), Latour (2005), Haraway (1992) and Gillespie (2014) have used the term not for its theatrical connotations but because the term can be applied to any entity (both human or non-human) that has the capacity to act on, against or

[57] The Facebook ticker is a real time stream of 'friend' activity that appears on the upper right-hand side of a Facebook user's Newsfeed

with a social assemblage of other actors. Latour states that '*anything* that does modify a state of affairs by making a difference is an actor' (2005: 71), whilst Barad (2007) proposes that it is not only human bodies that come to be constituted through performative actions but non-human actors too (and indeed matter itself). In keeping with their sentiments, the following subsections consider apps not just as tools for self-expression but as actors that, when 'entangled' (Barad, 2007) with the identities of those they seek to express, have the potential to intervene and disrupt individual identity performance on Facebook.

Method: investing in the 'like' economy

In total, sixteen participants were interviewed as part of this research project, all of whom took part in semi-structured, face-to-face interviews designed to explore participant engagement with third party autoposting apps on Facebook (see Appendix A for full interview list).[58] Participants were recruited through the 'Plugged-in Profiles' research page – a Facebook page established and maintained as part of the project, which gained eighty-nine 'likes' (that, is users who have subscribed to the page) and allowed calls for participants to be seen by over one thousand Facebook users. The page was accompanied by a research survey, which some participants filled out prior to their interviews.

Establishing a Facebook page involved self-reflexively joining the 'like' economy that this project seeks in part to critique. As Gerlitz and Helmond note, the nature of the 'like' economy is grounded on social connectivity (2013) – meaning that many of my subscribers (and subsequent interviewees) were largely recruited from friend networks close to my own pre-existing network on Facebook, leading to some methodological considerations explored below.

[58] Two group interviews were undertaken as part of the project – Kevin, Alice, Rory and Daniel were interviewed together, as were Rebecca, Audrey, Sophie, Terry and Steve. The participants taking part in these interviews were not strangers to each other – they were housemates, most of whom were friends on Facebook and therefore constituted part of each other's Facebook networks. Their 'offline' connection as house mates thus added a valuable additional dimension to their interviews, in the form of dynamic exchanges between participants (as exemplified in Kevin's accounts of autoposting) that highlight how the intervention of apps into users' Facebook profiles does not just affect the user themselves – it also impacts on their network.

Facebook pages can also be promoted through Facebook's pay-to-use marketing mechanisms. This option – to pay to promote the page – though a tempting prospect, was not implemented. I felt that paying for 'likes' was at best counter-productive and at worst unethical in relation to my research aims; and as De Cristofaro et al. (2014) have highlighted, using such Facebook's pay-to-use promotional techniques may well have led to 'fake likes' generated from legally and ethically dubious 'like farms',[59] rather than viable (human) research participants.

As a result of the social connectivity which structures the 'like' economy, participants shared some socio-cultural similarities in terms of their demographics – notably were all between 24-30 years old when recruited and based in the UK.[60] It is thus important to note that the accounts of my participants do not reflect the plethora of possible identities or demographics on Facebook; as is clear from the following analyses, participants' accounts are embedded within socio-cultural normative tastes and practices that are specific to their lived experiences and are therefore contingent on context-specific parameters of taste, class and cultural preference (amongst other factors). Their responses should thus not be taken as representative of Facebook users as a whole – rather their testimonies are explored here to highlight the ways in which apps intervene in self-performances that are always-already embedded in pre-existing frameworks of socio-cultural and economic norms, negotiations and practices.

Interviews were semi-structured in order to explore participant experiences of Facebook apps, and more specifically participant accounts of autoposting – that is, instances wherein automated status updates were implemented, produced and posted solely by the app on behalf

[59] 'Like farms' are comprised of human workers paid (nominal wages) to generate 'likes', or non-human 'bots' who algorithmically generate 'fake likes'. Like farms are actually banned by Facebook itself – it is third party marketers who exploit Facebook's 'legitimate' promotional mechanisms to benefit from these practices De Cristofaro et al. (2014).

[60] Such a recruitment process echoes 'Snowball' recruitment techniques, which drawn on participant/ researcher social networks to find participants who are not only interested but suitable for interview for the research project in question (Browne, 2005). The problem of demographic similarities also occurs in snowballing as a recruitment method – however as Browne notes the 'sameness' of participants is not always a problem if such demographic similarities are accounted for in the researcher's analysis.

of the user, rather than the participant themselves. Reflecting the wider unpopularity of autoposts, participant accounts of autoposts were almost wholly negative (with two exceptions explored below), often due to the fact that though the participant had inadvertently consented to autoposting as part of the Terms and Conditions for using the app, they had not realised that the app had autoposted in the specific instances featured in this chapter. That is not to suggest that participant engagements with apps in general (also covered as part of the interviews) were wholly negative – many participants enjoyed many benefits of engaging with the apps on their phones and networked devices. However, since autoposting apps as examples of algorithmic personalisation constitute the focus of this chapter, it is specific encounters with autoposting – rather than experiences with apps in general – that are here afforded the most critical scrutiny.

The following subsections explore participants' engagements, negotiations and entanglements with autoposting apps as personalisation practices, and are largely structured around in-depth examinations of particular instances of autoposting. Though such an approach means that some participant accounts are awarded a larger proportion of scrutiny than others, I found in-depth analysis of specific accounts of autoposting to be extremely valuable for unpicking participant negotiations with autoposting.

Part II

Who do you think you are? Carefully-crafted identity performance on Facebook

Before detailing specific accounts of autoposting, it is first important to establish how participants constructed and maintained their Facebook personas. After all, if Facebook claims that apps help users 'express who they are', who did participants think they were? What *kind* of selfhood(s) did participants seek to articulate through their Facebook profiles?

Despite Zuckerberg's claim that 'you have one identity', the idea that our Facebook profiles

reflect a certain 'type' of staged selfhood – rather than an 'authentic', holistic or 'fixed' self – was reflected in the contributions of many participants. For example, Calum (duty manager, 30) was happy to admit that his Facebook use reflected a 'version' of himself – but an exaggerated version. When asked '*Do you think your Facebook use reflects who you are?',* he replied:

> Yes and no – but maybe people see a version of me, a side of me that kind of, meta, hyper, you know, side of me... It reflects an aspect of my identity.

Similarly, Sam (digital communications manager, 29) also suggested that her Facebook use reflected a certain type of self, rather than an 'authentic' identity. Sam seemed clear that her performance on Facebook constituted what she called a 'constructed public persona' rather than a 'true' self.[61] She explained what she means by her 'constructed public persona':

> So it's how I want the world to see me… so for instance, I've had depression, and you wouldn't know that from what I said on Facebook… you wouldn't know if I was having a really shitty day at work for instance. [My Facebook use] is like me, it's not a completely different person, it is me, but it's not all of me. And it's yeah, it's like my *best self* [my emphasis].

Sam and Calum reflect Van Dijck's observations that 'users have come to understand the art of online self-presentation and the importance of SNS tools for (professional) *self-promotion'* (2013: 200, original emphasis). That is, in performing a 'best' or 'hyper' self that downplays perceived negative aspects of their personalities, Sam and Calum highlight their awareness that their identity on Facebook is a carefully crafted performance.

Though Van Dijck's assertion that 'users... have become increasingly skilled at playing the game of self-promotion' (2013: 210) was echoed in part by some participants, it was clear that for some participants self-presentation on Facebook did not necessarily equate to self-promotion – professional or otherwise. For example, participants such as Melanie (civil servant, 29), Kevin

[61] Sam preceded her use of the term with question 'is it ridiculous if I say pretentious media studies words?', suggesting that her mobilisation of this somewhat complex phrase can be explained by a background knowledge in theories of identity construction.

(accounts executive, 25), Calum and Sara (customer service manager, 29) were acutely aware that they were performing a constructed self, however this self was not maintained simply through a desire to perform their 'promoted' or 'ideal' self (Nagy et al. 2011), it was also contingent on an acute awareness of their 'invisible audience' (Sauter, 2013, McLaughlin and Vitak, 2012). 'Invisible audience' here refers to the network of friends, family, acquaintances and even strangers that could *potentially* view their performances of selfhood on Facebook. As Sauter notes, by posting to Facebook users are 'submitting themselves voluntarily to a panoptic form of constant scrutiny' (2013: 12) imposed by this audience. As accounts in this chapter highlight, this 'voluntary scrutiny' is complicated by the very invisibility and extent of a user's Facebook audience. Though Facebook participation is indeed voluntary, users do not always know exactly what their 'friends' see, and must also be aware that these 'friends' can be close friends but also family, acquaintances, work colleagues, all of whom are perceived to potentially 'expect' adherence to certain identity performances. For example, Calum explained that:

> I'm quite aware that, because I see friends who post lots of political things that like all the time, or petitions all the time and you do become a bit exhausted to see that kind of stuff, um so I don't want to saturate somebody else's Newsfeed with things that I don't really think they're necessarily going to be interested in.

As Calum further states, he was aware that his interest in LGBT politics might not always be welcomed by his Facebook audience:

> I could easily just always go on about LGBT policies when people get bored 'Oh there's Calum going on about the gay shit again and again'.

Thus, for Calum, posting content to Facebook is not simply about promoting his 'ideal' self, it was also about not 'saturating' his friends' Newsfeeds with content that might not interest them.[62] Similarly, Melanie's performance was also contingent on the eyes of her Facebook network. She states in relation to her Facebook use that, 'it's about being able to be selective and thinking about who your audience is'. Sara also recognised that her Facebook use was

[62] Perhaps Calum was right to be wary – as Beth explained in her interview, the only friend she has blocked on her Newsfeed was a friend who posted too much political content.

affected by the scrutiny of her network – she stated that she only posts content that she deems is acceptable to her network and professional colleagues, saying 'I have to restrict some of my personality I suppose' in relation to the kind of content she posts, and later added that 'I know I shouldn't care what people think of me, but I do'. Calum, Sara and Melanie's accounts suggests here that the performed self on Facebook does not always equate to a 'promoted' or 'ideal' self solely from the user's perspective; rather it is a selfhood also constituted through the perceived desires of their invisible audience.

If for these participants the enactment of selfhood on Facebook is carefully considered and staged with an invisible audience in mind, what role do apps play in this performance? As the following subsections expand upon, the role that apps play in the construction and presentation of selfhood was revealed as complex, tense and often unwanted – apps disrupted and intervened in these performances in ways that call their status as simply instrumental 'tools' (or perhaps 'props' would be a more fitting term) for self-expression very much into question.

Autoposting apps and the invisible audience

As the previous accounts suggest, the performed self on Facebook is enacted under the gaze of 'the sprawling mass of contacts most people amass on Facebook' (Marwick, 2013: 368). Kevin (accounts executive, 25) however, who was interviewed with his house mates Alice (researcher, 28), Rory (sales manager, 30) and Daniel (graphic designer, 29), had such an acute awareness of his 'invisible audience' that his Facebook activity was very limited. Kevin called himself a 'lurker' and explained that:

> I never post anything, I never do it… I feel sort of self-conscious. I feel like I don't want other people to think that I'm fishing for likes or if I don't get enough likes I'm like 'oh that was so embarrassing I shouldn't have put that one up' [Laughs].

He explains later in the interview when asked if his Facebook profile reflects 'who he is' that 'I don't think [people] would really, like get very much from my profile, because I don't really

contribute much'. Kevin's performance on Facebook is thus very much *restricted* by a consciousness of how others might see him, and is not contingent on any notion of an 'ideal' or 'promoted' self.

Given that Kevin's awareness of his imagined Facebook audience leads to a reluctance to perform at all, how does his interaction with Facebook apps affect this limited self-performance? Along with other participants such as Beth, Sara and Alice, it was Spotify that caused the most contention for Kevin in regards to his apps usage. The Spotify music streaming app on Facebook currently boasts over 10 million monthly users and as Facebook's Apps Centre states, by connecting to Spotify via Facebook a user must agree as part of the Terms of Service to this somewhat ambiguous condition: 'This app may post on your behalf, including songs you listened to, radio stations you listened to *and more*' (Facebook Apps Centre, 2014, my emphasis). There are a number of reasons why Spotify users might connect to Spotify via Facebook: for the convenience of using pre-existing log-in/ password details; because they want to see (on Spotify or on Facebook) other friends connected to Spotify; but also because for a time between 2011 and 2013, *the only way of signing up to Spotify was through Facebook* – new users could not use the service without signing up through their Facebook account (ZDNet 2011, Spotify Community, 2013). A number of participants (including Kevin, Calum and Beth) connected their Facebook/ Spotify for the latter reason. Other participants could not remember why they had connected via Facebook, though told me they suspected they had to in order use Spotify.

Upon signing up to Spotify via Facebook, a user's songs ('and more') have the potential to be automatically posted to their friends' via the Newsfeed or ticker. Spotify's settings allow free-account holders to listen to music as part of either a 'public session' – in which a user's song choices are publicised to their Facebook audience – or a 'private' session – in which songs are not publicised. Perhaps unsurprisingly, listening on a 'public session' is the default option for

users connected to Facebook. Notably, even if set to a 'private session', the user's session will *switch back to a public session* 'after a period of time' (Spotify Community, 2013) – which seems to be around 20 minutes – or will switch back to a public session every time a user logs in to Spotify.

Kevin explains that though he is aware that his Spotify and Facebook accounts are connected, he has occasionally forgotten to switch to a 'private session' on Spotify, meaning that his song preferences are then published to his Facebook friends' network. The following exchange between Alice and Kevin reveals the consequences of Spotify's autoposting of Kevin's listening choices:

> Kevin: If you forget [to switch to a private session on Spotify] then everybody's like watching every song that you're listening to, you could be listening to complete trash [Alice and Kevin laugh] really depending on what it is, it's happened a few times to me, I didn't even realise it was posting, I feel like, loads of people like it one time, like 'what is this?'
>
> Alice: And it's like Dolly Parton.
>
> Kevin: Yeah it was Nickleback.
>
> Alice: No way – that's so embarrassing!

Here then, Kevin's restricted Facebook performance is undermined by the Spotify app; even though Kevin consciously chooses to limit the amount of content he posts to Facebook, Spotify autoposts his listening preferences to his Facebook network without Kevin's knowledge or consent, at least at the time of posting. In publishing his listening choices in this manner, the Spotify/ Facebook connection is working very much in contradiction to Kevin's carefully performed identity on Facebook.

Not only is the app working in tension with Kevin's 'lurker' performance, the app is publicising songs that Kevin – and Alice – consider to be 'trashy' and 'embarrassing'. Kevin and Alice's sentiments suggest that listening preferences are here considered to be 'symbolic markers' of

identity (Marwick, 2014: 367) or as Liu frames in Bourdieu's terms, 'interest tokens' that constitute a 'taste statement' (Liu, 2007). As Marwick and Liu note, identity is in part constituted by 'interest tokens' (such as songs) which 'serve as symbolic markers that signal something about who [users] are' (Marwick, 2014: 367). I will shortly return to how such taste statements can be considered as social classifiers of both the self and others (Bourdieu, 1989), but here I want to emphasise that Kevin's music choices are framed as a taste performance that partially classifies 'who he is' (in Kevin and Alice's eyes at least). Crucially however, unlike the symbolic markers of selfhood that Marwick describes, the songs Kevin is listening to on the Spotify app are not consciously 'displayed' by Kevin as markers of taste – they in fact function as *unwanted* markers that are automatically posted by the app, not by Kevin himself. Here then emerges an approach to identity formation that echoes Jordan's analysis of how selves come to be made visible – and therefore come to exist on SNSs. Drawing parallels with Butler's notion of performative identity constitution, Jordan notes that on SNSs the self comes to exist through visibility in that network. He states:

> The self will only maintain itself and have its own characteristics if it can continue to be read and be associated with its own characteristic kinds of posts. We can see this in the phenomenon of people logging on to someone else's social media network and posting in ways that they would not normally post (2015: 128).

In Kevin's case it is not another human subject that disrupts his identity performance but a *non-human* actor intervening on his behalf. In posting Kevin's potentially 'trashy' or 'embarrassing' listening preferences, the Spotify app is performing a clearly unwanted utterance of selfhood – a moment of intervention into Kevin's Facebook activity, wherein the app is revealed as a powerful, algorithmic 'socio-technical actor' (Gillespie, 2014: 179). By performing an act of self-articulation on Kevin's behalf, Spotify thus reveals a power to actively (re)shape Kevin's intentional representations of identity, rather than functioning simply as a tool for self-expression. The 'offending' autopost reworks and rewrites the identity brought into existence via the Facebook network.

Performing in the 'right' kind of way: the 'like' button as a slippery signifier

Kevin's account also exposes the role of the 'like' button as a flexible signifier that does not necessarily denote that someone actually 'likes' the content that they have acknowledged. When Daniel later states that he makes sure his Spotify app is set to 'private session' when listening to embarrassing songs, Kevin states:

> Kevin: To be brutally honest I've done opposite, I've found a really good song and turned it off private and then played it to see who would comment [the group laughs] like five times in a row, like 'I've discovered this amazing music'.
>
> *Interviewer: Right and has it ever had the desired effect? Have you ever had any likes or anything?*
>
> Kevin: No it only gets likes when it's a terrible song.
>
> [Both laugh]
>
> *Interviewer: Is that because people actually 'like' it you think?*
>
> Kevin: No, no it's because they're ripping the piss, I think, otherwise they're kind of like 'yeah whatever, you found some music, I don't care'.

The fact that Kevin believes that his friends only 'like' songs in order to 'rip the piss' not only highlights the discursive and affective limitations of the 'like' economy that Gerlitz and Helmond identify, it also reveals the complex strategies mobilised by individuals in order to *subvert* these limitations – according to Kevin, his friends are re-appropriating the 'like' button in order to signify their derision of Kevin's song choices. In using the 'like' button to signify a form of 'dislike' (or at least derision), Kevin's friends reveal what Latour calls 'the risky intermediary pathways' (1999: 40) subjects follow when assigning meaning to referents. In this case, the rigid logic of positive sentiment enforced on users through 'like' button is challenged; the pathway to meaning behind the button is made slippery, playful and ironic.[63]

[63] Though not explicitly acknowledged by Kevin, the slipperiness of the 'like' button also allows for another possible interpretation: that Kevin's friends as 'liking' his 'trashy' song choices because of their subcultural value – that is, the songs are denoted as 'likeable' because they are 'so bad that they're good'. Thornton's work on subcultural appropriation deals with this kind of taste performance, (1997), however since Kevin reported that he feels the

This is not the only form of subversion evident in this exchange however – in playing an 'amazing' song five times in a row, Kevin tries to present what he deems to be a publicly acceptable song to his audience. In doing so Kevin is attempting to use the app as a 'tool' to perform a revised selfhood; a self-performance constituted by the public disclosure of 'amazing' rather than 'trashy' songs. Unfortunately for Kevin, his efforts to take back control of his performance fall on deaf ears so to speak – it seems that Kevin's friends only acknowledge his performative slippage of listening to 'terrible' songs in public.

Kevin's attempted redirection of Spotify's autoposts exemplifies Gillespie's proposal that algorithmic socio-technical architectures encourage users to 'orient [themselves] towards the means of distribution through which we hope to speak' (2014: 184). He writes of Facebook:

> Some [users] may work to be noticed by the algorithm: teens have been known to tag their status updates with unrelated brand names, in the hopes that Facebook will privilege those updates in their friends' feeds... other may work to evade an algorithm (2014: 184).

Here then Kevin is attempting to be 'noticed' by the Facebook/ Spotify connection in the 'right' kind of way (by listening to the same song five times in a row) – in order to present a socially acceptable form of selfhood, Kevin works hard to orient his actions to suit the algorithmic protocols of the two connected apps. The algorithmic personalisation practices deployed by Facebook here highlight that the technological actants[64] that seek to anticipate and intervene in user expressions of selfhood have the performative power to rewrite the self in ways that *undermine* both the autonomy and very identities of those entangled with the personalisation process.

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songs were 'liked' in a derisive way, I have focused on this instance of taste performance as a kind of identity slippage rather than sub-cultural negotiation of 'so-bad-it's-good' taste.

[64] As Sauter uses the term 'actant' rather than 'actor' it is worth acknowledging the difference between these two terms: according to Latour, though both terms refer to an entity which has the capacity to act in any way on a social assemblage, an 'actant' is an actor which has 'has no figuration yet' (2005: 71). As such, Sauter uses the term 'actant' to describe those actors not yet configured into a recognisable site or object. Similarly I would argue that the contemporary drives to personalise that take the focus of this thesis might be considered 'actants', whilst specific personalisation practices – such as autoposts – might be considered 'actors'.

Re(writing) and regulating the self through Spotify

Like Kevin, Beth (24, teacher, UK) also recounted a number of unwanted autoposts by the Spotify app. She stated as a part of her survey response:

> I didn't realise Spotify automatically shared everything [to Facebook]! It was only when someone 'liked' the fact that I added a song to a play list and played a song that I realised. I didn't care too much, despite having a lot of guilty pleasure songs but I generally switch it to a private session now as it just seems unnecessary.

Echoing the exchange between Kevin and Alice, Beth's sentiments suggest here that music choice is a symbolic marker of taste; and by divulging her 'guilty pleasures', Spotify is unwantedly intervening in her taste performance. Furthermore, Beth expressed later that she felt the autoposting of 'guilty pleasure' songs could have an impact on how *others* see her on Facebook, stating that 'I guess [Spotify songs] will affect how people see you, but not necessarily in a bad way.'

Like Kevin's testimony, Beth's account so far highlights the power of apps such as Spotify to intervene in self-performance on Facebook. Yet Beth goes on to emphasise that apps hold even greater performative power – not only to disrupt the writing of the self on Facebook but to also regulate and restrict the self *beyond* the boundaries of the site. As Beth explained in her interview, the Spotify app currently has a function in which it automatically switches from a 'private' to a 'public' listening session after twenty minutes. She stated that:

> Half the time on my phone, if I go out and I just have my headphones on if I've left [Spotify] for a bit it goes back to the non-private setting, so um, half the time on my phone I don't do it because I've already started walking and you have to like, I don't know remember how to find [the 'private' setting] or whatever.

The fact that Spotify switches from a 'private' to 'public' session after twenty minutes impedes Beth's capacity to comfortably remain in the realm of private listening, leading to her concern that the type of song she is listening to many not be suitable for sharing:

> I might be listening to something and then I'm like 'oh I want to listen to something else' and then I'll think, I'll remember I'm online, maybe because I want to listen to something that's a bit more like, I don't know, that I don't want anyone to know about.

Beth explicitly states that this disclosure of her song choices is unwanted, but she does not know how to stop it; she states: 'I'd rather have it so it's a private setting all the time, but... I don't really know how to do that'. To compensate for this lack of technological know-how, Beth has come up with an alternative solution to avoid the unwanted disclosure of the songs she is not comfortable sharing:

> If I listen to a playlist quite often I'll just kind of leave it because then it will just say I've listened to that playlist rather than specific songs.

Beth here then recounts that her Spotify/ Facebook connection has actively led to a *restriction* of the songs that Beth feels she can listen to while she is listening on her mobile phone – to avoid the risk of publicising a song 'she doesn't want anyone to know about', Beth will only listen to specific play lists. The Spotify app's connection to Facebook here then works to regulate Beth's listening habits, redirecting Beth's self-performance through an architectural framework that encourages her to adhere to symbolic markers of music taste that she feels are publicly acceptable. The 'publicness' of Spotify's listening session thus compels Beth to modify her listening practices to suit the perceived scrutiny of her invisible audience, despite the fact she is enacting the very much private performance of simply listening to music on her mobile phone.

Beth's strategy for coping with Spotify's autoposting capabilities expose the power of apps not just to perform on behalf of the user but to actively redirect – and in Beth's case *regulate* – the kinds of performance that can be enacted in relation to the self. Beth's coping strategies exemplify Agre's 'capture model' of socio-technical organisation; that is, 'the grammar of action' imposed on users causes the individual 'to *orient their activities* towards the capture machinery and its institutional consequences' (1994: 110). In Beth's case the 'capture machinery' is the algorithmic technologies employed by Facebook and Spotify, and the

'institutional consequences' are the making 'public' (to Beth's Facebook network at least) of music preferences that would otherwise be private. By forcing Beth to orient her activities and regulate her music choice to adhere to a normative ideal of publicly acceptable music, the idea that Spotify helps Beth express her identity is called very much into question.

It is worth highlighting that Facebook's 'capture machinery' is able to regulate Beth's behaviour here *because* of the perceived scrutiny of her invisible Facebook audience that the app enables, wherein a 'panopticon' (Foucault, 1988) of social surveillance is (self)imposed as a disciplinary power. Furthermore, the disciplinary power of the invisible audience is deployed and enforced via the logic of the 'like' economy – that is, Beth's not only social but *private* interactions (between herself and her music player) are commodified by Spotify and Facebook, who seek to generate revenue through the making public of private listening habits. Beth's negotiations with her Spotify/ Facebook connections are therefore conditioned through a complex intersection of algorithmic protocols, social surveillance and the logic of the like economy – all of which lead to a regulation of Beth's self-expressions. In structuring these conditions in a disciplinary framework, it seems here Spotify/ Facebook hold the performative power to tell Beth 'who she is', rather than vice versa.

'Spotify has added an event…'

Beth's negotiations with her Spotify/ Facebook connection were further complicated by another account of autoposting. She explains how a few weeks prior to the interview that Spotify had 'added an event from her past':

> [Spotify] sent me this completely random thing that came up on my phone the other day that said um, 'Spotify has added an event from your past', and I was like 'what is that?' and it was just that I'd listened to this completely random song like, several months ago… it just popped there, and it kind of annoyed me because it didn't ask me if I wanted to put it on there, it just added it on there.

Beth expanded on her reasoning for being annoyed by this unwanted addition to her 'past'. When asked 'was it a song that you were happy to be added?', she explained:

> It wasn't one that I minded, no it wasn't like a cheesy, it was just a random album song… I felt a bit indifferent about it, about the song choice, but it felt like [Spotify] was trying to make it significant and it wasn't, because I was just listening to it as part of the album you know, it wasn't like a special thing or anything.

Here then it is not so much the 'tackiness' of the song that registers as annoying for Beth – rather it is the fact that an 'insignificant' song in Beth's listening habits has been suddenly and non-consensually demarcated as 'significant' to Beth's 'past'. When asked whether she deleted the unwanted autopost, Beth replied:

> Well no, because when I actually went on to my page I couldn't see it, but then somebody liked it, so it must've been somewhere but I couldn't find where it was… you know when it shows just [notifications] on the iphone, but then it wasn't like on my page or on my, it was kind of just an isolated, so I don't know where it is, or if it's still there, I don't really know.

Spotify's utterance of selfhood on Beth's behalf here takes on both an ephemeral *and* archival quality – it has been added but Beth does not know where it is, rendering action against the offending autopost impossible. As Beth states, the song is not an identity marker deemed important enough for her to consider it as 'significant' to her archived selfhood on Facebook, yet Beth in this instance is powerless to become editor of her written *historical* identity. The ambiguous visibility (i.e. that the post is ephemerally visible to her and may or may not be visible to her friends) of such posts is an attribute unique to autoposting, as outlined further in the following subsections.

Here however I want to stress that Beth's Facebook/ Spotify connection exemplifies the *struggle for autonomy between user and system*, that as I argue in Chapter Two is created by algorithmic personalisation. By this I mean that in this instance, the app's decision-making capacities to automatically 'add a song' to Beth's 'past' exist in direct tension to Beth's own decision that the song is indeed irrelevant to her historical identity. The apparent 'convenience' of having an app 'personalise' for Beth her very history thus becomes a site of struggle in which the app is imbued with autonomous capability. In doing so Spotify's action works to

quite literally rewrite Beth's Facebook history to suit the operational imperatives of Spotify.

'You have one identity'? Context collapse caused by apps

Not all moments of identity performance slippage via apps exposed a 'guilty pleasure' for participants. For example, Sam (digital communications manager, 29) reported that she had only experienced one instance of autoposting – by an app called Slideshare – a tool for designing and creating professional presentations. Sam explains that:

> So it turns out when I upload something to Slideshare [a presentation app] it posts a picture of it on Facebook… that's why I don't like things that autopost, because I don't, I don't really use, I don't use my personal Facebook profile for works things, I use Twitter for it, so my Twitter profile is like my 'work me'.

Sam thus alludes to the fact that her identity performance changes depending on the platform – her Twitter account presents her 'work me', while her Facebook account does not. Furthermore, as Sam herself admitted during the interview, publicising your professional presentations does not necessarily constitute a disclosure of a 'guilty pleasure'. Why then was she bothered by this unintended posting of professional content? She explained that:

> I think for me I guess it goes back to the like, the persona thing because I don't really talk about work on Facebook… it just didn't really fit with the sort of stuff I do, whereas with Twitter I'd more than happily say, in fact probably will say, this is a presentation that I did because that's where I talk to people about work stuff I do, and I have people who follow me for work stuff.

Thus in this instance the autoposts of Slideshare do not disrupt the boundary between public and private – a boundary crossed in Beth and Kevin's negotiations with Spotify for instance – but instead a boundary between online social contexts. In dissolving the boundary between Facebook and Slideshare, the Slideshare app's actions epitomise what Marwick and boyd call 'context collapse' (2008) – that is 'the theory that social technologies make it difficult to vary self-presentation based on environment or audience' (Marwick, 2014: 368). As Marwick notes, 'people have developed a variety of techniques to handle context collapse' (2014: 368), and in Sam's case this entails having separate Twitter and Facebook accounts that represent different facets of Sam's selfhood. In autoposting symbolic markers of her professional selfhood to the

wrong context (that is Facebook rather than Twitter), the Slideshare app brings about a collapse between contexts that Sam has worked hard to avoid.

In creating this context collapse for Sam, the Slideshare app highlights that Facebook's ambition to become a 'cross-platform platform' can tangibly disrupt the context-specific identity performances enacted by users. In doing so, autoposts by apps highlight that users *do not* have one identity that can be 'expressed' across all platforms to all audiences. Sam's sentiments exemplify Van Dijck's assertion that: 'each construction of self entails a strategy aimed at *performing* a social act or achieving a particular social goal' (2013: 212). The function of apps to apparently 'express who you are through all the things you do' (Facebook, 2013) actually works to foreclose the possibilities of enacting multiple identities across different platforms.

More than this though, the context collapse caused by autoposting across platforms (which is indifferent to the various presentations of self that are deemed appropriate by subjects to various contexts) here makes explicit the *impossibilities* inherent in the contemporary drive to personalise: that is, to both 'know' and 'anticipate' the 'one identity' that Zuckerberg believes exists, but whose endless expressions can be successfully captured across *and* recursively used to anticipate the endlessly-expressive user. As explored in Chapter Two, data trackers' tireless efforts to correlate and map the trajectories of abstract 'dividuals' is indicative of the fact that platform providers are not trying to make fixable 'one identity' – rather they are trying to capture, correlate and monetise real-time movements between dividuals as nodes in a network. The cross-platform connectivity of autoposting apps may enhance Facebook's scope for commercial development by allowing Facebook to track or anticipate selfhoods *across* platforms, but in doing so they negate the potential for users to perform multiple, carefully performed selfhoods in exclusive online environments. In Sam's words, 'the apps I choose probably do tell people about me. But I am not my Facebook app permissions'.

Sexually suggestive content and exploiting the connectivity of apps

Kevin, Sam and Beth's engagement with apps and autoposts so far revolve around the apparently innocuous leakage of 'taste statements' (Lui, 2008) that unintentionally intervene with their self-performance on Facebook and elsewhere. Calum's experiences of apps however involved the disclosure of slightly more sensitive material. Calum explains:

> So what happened was, on Instagram you know, I follow all sorts of things, mostly friends but you know sometimes the occasional celebrity who's interesting on Instagram... but in this instance it was a porn star.

Calum explains that he was 'liking' (on Instagram, a popular photo sharing platform) photos from this porn star, some of which were sexually suggestive, and in doing so these photos were appearing as part of his Facebook activity:

> Of course these [photos] were coming up on my News Feed, which I didn't, which I wouldn't have been made aware of, only for I think another friend had actually liked it on Facebook.

Calum, like Sam, Kevin Beth and all other participants who had experienced unwanted autoposts, acknowledges that though he may have consented to some form of autoposting as part of the Terms of Service for using the app,[65] he was not aware that this particular instance of autoposting was going to occur. As Calum puts it 'I wasn't aware of what [Instagram] was going to be sharing… I understood it more as that if I took pictures and wanted to share them, they would share to Facebook'; it did not occur to him that simply 'liking' a photo on Instagram would trigger an autopost to Facebook. Though Calum figured out how to cut off the connection between Instagram and Spotify (though he admits it was 'a bit of a job'), his experience highlights a subtle but important distinction: though Calum had consented to 'the app posting on his behalf' at the time of installing the app, he felt he had not consented to the specifics of autoposting with which he had subsequently been confronted. As scholars such as

[65]Sam, Beth and Kevin also acknowledged that that autoposting may have been a prerequisite to using the app. For example, Beth stated 'maybe it was like in [Spotify's] Terms and Conditions or I just didn't read it properly, but I felt it should have asked me first [before autoposting].' Beth's sentiment highlights the precarious nature of consenting to autoposts: though participants recognise that they were required to consent to the possibility of autoposting in order to use the app, they did not consent to the specific instances of autoposting that they have had to negotiate.

Gillespie (2014) and McStay (2012) have noted, the lack of specific information, use of opaque and vague terminology in Terms of Service mean that understanding of the socio-technological conditions which users commonly accept can at times be 'vague, simplistic, sometimes mistaken' (Gillespie 2014: 185). It seems then that for Calum merely consenting to autoposting as part of the terms and conditions of app use does not equate to unconditional consent in all circumstances.

Furthermore, the fact that Calum realised these photos were being publicised on Facebook only *after* his friend had 'liked' them highlights a form of opacity unique to autoposting: that is, unlike other posts that are consciously written by the user themselves, autoposts by apps do not always appear on a user's own Timeline or Newsfeed – instead, they appear only on friends' News Feeds, or tickers. These autoposts then are invisible to the very individual that has supposedly 'written' them, thus rendering action against such autoposts impossible – unless the autopost is made visible by *another user's* acknowledgement of it.

This ambiguous invisibility of autoposts is a characteristic unique to autoposts – all of the other 'technologies of the self' (Foucault, 1994) that can be performed through Facebook (writing status updates, sharing content, uploading photos) are fully visible and controlled by the user because they are enacted and instigated by the user. The invisibility of autoposting highlights the 'slipperiness' of algorithmic personalisation – users do not know for sure what is being personalised, when and how. In this case what is being personalised are articulations of *personhood itself*. In doing so autoposting can be considered a kind of 'technology of the self' that is far removed from the self it supposedly articulates – autoposts are invisible to the user they speak for. And yet I would argue that even as this articulation of self is removed from the self being articulated, it is simultaneously 'entangled' (Barad, 2007) with it because autoposts work (in part) to performatively *constitute* the self articulated to a user's Facebook audience. To elaborate; Jordan emphasises that the process of producing subjective 'presence' in internet-

based communicative practices 'depends on a priority from *receivers who legitimate senders* based on styles of messages and the sending of messages' (2013: 131, my emphasis). Applying this to the 'material performative' (Jordan, 2013: 53) of autoposting, it seems that the self is legitimised as a subject by receivers (in this case the Facebook audience) *without any conscious action from the sender/ subject at all.* This might explain why autoposting is so overwhelming unpopular (with both participants and the wider Facebook usership) – not because autoposts are 'confusing' as Facebook claim, but because they algorithmically constitute the self in ways that remove the self (at that moment) entirely from the process of constitution.

Wanted autoposting?

What of those autoposts that *are* wanted by users? Marc (postgraduate student, 24) and Rory (sales manager, 30) were the only participants who said they 'did not mind' if apps autoposted to their Facebook audiences. However, even these participants did not mean any app – they were specific about the apps that they did not mind autoposting on their behalf. For example, Marc, who had no specific negative experiences of autoposting, did acknowledge that he enjoyed publishing his running activities to Facebook through the Sports Tracker app – he stated that 'I get a few likes now and then if it's a particularly long run'. Similarly Rory stated that he 'always knows' when the Pinterest app will autopost, and 'it's not necessarily that it's something that I wouldn't share anyways, it's just about the fact that you know, I'm in charge of all of this'. The key difference between Marc/ Rory's and Calum's experiences seems to be the awareness enjoyed by Marc and Rory and the high degree of control that such awareness afforded them. Thus, in Marc and Rory's account, the app functions more like a tool than an actor, and thus works to support their intended identity performances, rather than disrupt or undermine them, or indeed trigger a struggle for autonomous control over what is posted and when. It seems then that it is the very unwantedness of offending autoposts that renders their function as actors apparent.

Autoposts as spam and game posting as 'chavvy'

This chapter has so far centred on the interventions of apps into participants own self-performances – yet many participants also noted the presence of apps in their friends' Facebook activities. Somewhat surprisingly given their popularity on Facebook, it was friends' posts regarding game apps that were most frequently cited as irritating, frustrating or annoying. As Melanie states of game posts by her friends:

> It's advertisements as far as I'm concerned… it's people I know that are advertising these things and it's crafty and I don't like it.

Melanie's observations that games posts are 'advertising' exists in clear tension to Facebook's rhetorical framing of these same posts as 'sharing' – yet her sentiments highlight that the like economy is built on a system of social connectivity that can be efficiently monetized by the platforms that support it (Gerlitz and Helmond, 2013). For example, players of the popular 2014 smartphone game 'Candy Crush' can either pay for 'tickets' to proceed to the next level of the game, or they can ask their Facebook friends for tickets via Facebook. Instances such as these render the value of social connectivity as profoundly apparent – the connection between three Facebook 'friends' (the number of friends needed to get a ticket) is quite literally worth 79p.

Participants' framing of posts by games as 'advertising' suggest that the monetary value of the social web does not go unnoticed by those users implicated in it. These posts by game apps highlight the advertising value of Facebook apps for third party stakeholders (app developers, app owners, data aggregators etc.) in terms of generating visibility for marketers' apps – yet these same posts, according to participants, also hold *negative* cultural value for users in relation to self-performance on Facebook. For example Sophie (publishing assistant, 28) stated:

> My biggest reaction when I see people post gamey kinds of status things is just like I can't believe you play those stupid games, and people actually go down in my esteem.

Similarly in their group interview with Daniel and Kevin, Rory and Alice took up the idea of game invites as 'spammy' and annoying. Like Sophie, Alice and Rory believe that autoposts on Facebook affect how others see them:

> Alice: Yeah I think I just think people are probably just a bit stupid that's really harsh isn't it… I mean it's slightly hypocritical me saying this because I've clicked through terms and conditions without looking at anything, but I think it's just a sign of people not really paying attention to what they're doing, or not really having the foresight to think oh hold on maybe I should check this because games are really dodgy on Facebook.
>
> Rory: I guess there are some people who are just, so [pauses] I don't even know how to describe it.
>
> Alice: Were you going to say chavvy?
>
> Rory: Well I can think of somebody who I would class as being chavvy who does, who everything comes through and you think, ah, typical.
>
> Alice: I hadn't thought of it as a generalisation but I can immediately think of some people who would fit that bill.

The class connotations in this somewhat hesitant and self-conscious exchange are clear – both Rory and Alice agree that inviting people to play games and posting game posts is 'chavvy' (see footnote 54 for definition). Here then, Bourdieu's theories of taste, class and cultural capital are useful to consider. Bourdieu notes that individuals' sense of taste – that is 'our tendency and ability to acquire (materially and symbolically) a certain class of classified and classify objects or practices' (189: 173) – is deployed in order to distinguish legitimate and acceptable social practices from those deemed to be illegitimate or unacceptable. The act of even *unintentionally* allowing autoposts to bombard friends with invites is used by Alice and Rory to classify those who allow it as 'chavvy'. Rebecca (lecturer, 27), echoed this, stating:

> When I see people post stuff or you know sharing stuff about games, I don't think you're an idiot for playing the game, I think you're an idiot for sharing it.

Thus for Rebecca, it is not the playing of the game in itself that matters, it is making the game play *public* that is seen as detrimental. Here, Liu's analysis of 'destructive information' in relation to the performance of the self becomes especially relevant. As

Liu states:

> Any outlier of interest tokens in [user] profiles – such as the inadvertent mention of something tabooed or distasteful – could constitute destructive information and spoil the impressions that users are trying to foster (2008: 258).

Autoposts by game apps are framed by Sophie, Rebecca, Alice and Rory as pieces of 'destructive information' – the sharing of game achievement is connoted to be detrimental or distasteful. The question of *why* game posts are so detrimental to these users – as compared to other autoposts or actions by other apps – is a complex one that requires critical examinations of class, gender and socio-economic circumstance, especially in relation to cultural and social capital. As Turner notes however, in the fields of internet studies 'class has taken little hold as an analytical lens outside the literature on the digital divide' (2014: 257), and so there is limited literature regarding the relation between articulations of taste as classed on social media.[66] That said, scholars such as Livingstone (2014), Ellison, Steinfield and Lampe (2007) and Schradie (2012) have begun to broach the roles that class, cultural capital and social capital might place in the formation and sustenance of social relationships on SNSs. For example in their study of 'social bridging and bonding' on Facebook (2007), Ellison, Steinfield and Lampe state that 'we can definitively state there is a positive relationship between certain kinds of Facebook use and the maintenance and creation of social capital' (2007: 1161). However though their study suggests that Facebook use helps individuals generate *social* capital[67] in the forms of generating more social ties, their research does less to consider how *cultural* capital – that is what Bourdieu defines as acquired 'knowledge', 'manners' or 'orientations/ dispositions' (Jenkins, 2002: 85) that are seen to be 'legitimate' by particular classes or groups and therefore 'mark and maintain

[66] There is however extensive literature on class and other media – for more see Skeggs & Wood (2008) for work on reality TV and class; Hall, Clarke, Jefferson and Roberts (1975) and Thornton (1997) for media, subcultures and class; Medhurst (2002) for work on British identities and comedy and Hesmondagh (2013) for popular music and classed taste judgments.

[67] Bourdieu and Wacquant describe social capital as 'the sum of resources, actual or virtual, that accrue to an individual or group by virtue of possessing a durable network of more or less institutionalized relationships of mutual acquaintance and recognition' (cited in Ellison et al, 2007: 1145)

social boundaries' (Jenkins, 2002: 135)[68] – might be affected by the generation of social capital. Though I feel this avenue of investigation would contribute to research on how class dynamics affect identity and taste performance on Facebook, I feel that a more in-depth study of class, game apps and identity performance lies outside the remit of this study of user entanglements with algorithmic personalisation. What I would argue here is that algorithmic personalisation practices 'classify' users in abstract and multiple ways – users are classified as dividuals in databases that are then translated back into traditional classifying demographics (as explained in Chapter Two), but also at other times algorithmic personalisation practices can make interventions into how *others* classify us, by performing on our behalf taste articulations that are judged as 'distasteful' or illegitimate. That is, by acting for us, algorithmic personalisation does not just 'personalise' experience but in the case of autoposting, act for users in ways that trigger value judgements by other users.

It seems important to highlight that as well as relating to class dynamics, 'distasteful' (to those I interviewed) identity performances via game apps seem to involve breach of expected norms and practices on Facebook. For example Sam when asked why she finds frequent posts from her gamer friends annoying, she states:

> I think the fact that they don't seem to have any self-control about sharing, so whether on not it's that the app's too tricky or forces you to invite people... but I think it's because I'd see it as being a little bit impolite, or it's just not my version of internet etiquette to spam people with this stuff.

Game app posts by friends for Sam then breach her expectations of 'internet etiquette'. As McLaughlin and Vitak note, online norms are dependent on the technology that facilitate them, and as such the 'norms' associated with socio-technical practices (such as autoposting) must

[68] Jenkins' (2002) work on Bourdieu clearly demarks cultural capital as a matter of taste – he writes of Bourdieu work *Distinction* that 'Bourdieu's target here is… the consistent use of notions of 'taste' as a sort of naturally occurring phenomenon- to mark and maintain (in part by masking the marking) social boundaries, whether these be between the dominant and dominated classes or within classes' (2002: 135). In defining the accumulation/ decumulation of cultural capital as a matter of taste it is possible to see how identity performance (by autopost or by Facebook users themselves) might be considered to be 'tacky' or 'tasteless'.

'evolve with the technology' (2012: 3). Autoposting by apps is a developing socio-technological practice that is yet to be accompanied by a fixed set of norms. Such norms can be seen as conditioned by taste and value judgements made by others about what is 'legitimate' or 'acceptable' in terms of automated social interactions. As such, it seems game autoposts can breach the established socio-cultural norms held by some of the individuals exposed to them.

Furthermore, Jordan notes that the changeability of communication technologies has implications for these technologies as 'material performatives' (2013). He states: 'what is at stake [in communicative practices] are not fixed universals but particular social and cultural practices that allow transmission to reliably and repeatedly occur' (2013: 133). The repetition Jordan refers to here relates to Butler's proposal that it is discursive iterative acts which constitute and also destabilise the self; Butler notes that it is through repetition that subjects come to be discursively constituted, and yet it is through repetition (which is paradoxically never an exact copy of itself) that space for destabilisation opens up (Butler, 1993, Jordan; 2013). As a new form of material performative, autoposting does not just carry a new set of cultural practices, it also opens up new possibilities for iteration and destabilisation of the self – as the accounts of Beth, Kevin and Calum make apparent.

It is important to note that the as-yet contestable cultural practices inherent in autoposting are structured not only by legitimised social values but also by the exchange values imposed on social interactions by the 'like economy'. As Jarrett notes, we must consider users 'as agents who, while exercising that agency, may nevertheless be working within capital, disciplining other users into social norms and patterns of behaviour that support that system' (2014a: 24). With autoposts, though the classed values expressed by participants involve disciplining (through judging as illegitimate) other users' autoposting actions, autoposting seems also to be *rejected* by participants in part *because* they are viewed as advertising. Here then, the disciplinary power of the invisible audience seeks to regulate users through class dynamics, and yet also

seems to reject the capitalist mechanics of autoposting as a form of advertising – there is a rejection here of autoposts as 'tasteless' because they are commercial mechanisms.

As mentioned earlier, autoposts by apps may soon be phased out of Facebook's structural architecture altogether due to their unpopularity – the next 'phase' in the evolution of non-human 'tools' for self-expression seems to be 'suggested shares' such as Facebook's automatically generated 'memories' updates, which afford the users a far higher degree of control over the auto-generated post in terms of who is it shared to and when. For now it seems however that the participants included in this study are caught up in socio-cultural moment that may not last – their negotiations with apps signify a transient practice of explicitly unwanted algorithmic personalisation that may soon be 'fixed' by Facebook.

Conclusion: algorithmic personalisation and the performed self

This chapter has sought to explore and analyse autoposts by third party apps as automated utterances of selfhood – and as moments of algorithmic personalisation – that intervene and at times disrupt the carefully considered identity performances that Facebook users enact on Facebook. My analysis of participants' accounts of (largely unwanted) moments of autoposting has sought to highlight that Facebook's third party apps are not only *tools* that 'help users express who they are' as Facebook claims – they are technological a*ctors* that hold the autonomous potential to write, and therefore perform, acts of selfhood on behalf of users. By considering the lived experiences of those who have encountered autoposting it becomes possible to document and critically examine one of the key arguments proposed in Chapter Two: that is, personalisation's attempts to act autonomously yet algorithmically on the user's behalf actually works to *undermine* the autonomous identity articulations supposedly aided by personalisation. This process of personalisation thus creates an entanglement between the user's identity and algorithmic identity – Kevin and Beth must struggle to control the identity performance enacted on their behalf by Spotify to their invisible audiences, Sam must negotiate

autoposts between two platforms in order to perform the 'correct' kind of context-specific selfhood.

Though this chapter has looked to examine largely unwanted moments of autoposting, is important to reiterate, as highlighted by Marc and Rory's testimonies, that not all posts by apps are viewed as detrimental to self-presentation on Facebook: given the right level of consent, control and understanding, apps can and are used by users to display wanted – rather than unwanted – taste articulations. The popularity of apps also suggests that many users willingly and enjoyably engage with apps on a daily basis. It thus seems it is the unconsensual nature of autoposts – where the app as tool becomes the app as unwanted actor that can perform and act on behalf of the user – that is resisted by participants.

Finally, this chapter has sought to critically consider what kinds of identity constitution autoposting constructs and demands for those entangled with this specific personalisation practice. As noted in the introductory chapter and as Jordan recognises, SNSs demand a new consideration of the ways that the self is invoked and constructed. Jordan states:

> Uneasily coincident [on SNSs] are the self as someone who came to the network – in terms of private and public this is likely to be someone who comes with their identity as property – and the performances the identity puts on, which are required to exist on the network and so require publicness (130: 2013)

For the Ghostery users interviewed as part of this thesis, the inner, pre-existing self was invoked as an identity constitution that must be 'protected' against data tracking (but not necessarily against personalisation practices for some users). Conversely in this chapter the performed self as constituted through the network is brought to the fore in autoposting.

The self that is performatively constituted through autoposting takes on a particular significance if we consider the cross-platform potentialities of autoposts to regulate and govern the identities beyond the boundaries of Facebook. If we take as an example Beth's regulation

of her listening habits to suit the 'publicness' demanded by her Spotify/ Facebook, it is possible to mark a tangible moment of constitution and regulation enforced by the personalisation process – Beth's listening habits are redirected through a grammar of action that not only regulates her self performance on Facebook but her performative articulations of selfhood as she listens to a (limited) playlist walking down the street. Furthermore, Beth's negotiations with Spotify reveal that apps can intervene in not only present articulations of the self but past ones too – by adding an unwanted event to Beth's Facebook history, the Spotify app has the power to quite literally rewrite Beth's 'past' selfhood on Facebook. In doing so, autoposts highlight the performative power of Facebook apps to constitute particular kinds of selfhood – selves that adhere to 'legitimate' classifications of taste, public acceptability and cultural interest, and that suit not only the logic 'like' economy but also the commercial drive to anticipate and act on the user.

Chapter Six

In Google We Trust:
the predictive promises of Google Now

'*With the predictive power of Now you get just what you need to know, right when you need it*'
(Google Now, 2014).

'*They know I'm on campus, but I mean they got that wrong as well… I think like I'd trust them to be able to do more than that… I mean like with all the information and like algorithms and whatever they have, I wouldn't assume them to get it wrong*'
(Lisa, in focus group, 2014).

Part I

Introduction: the information you need before you even ask

This chapter is the last of three to focus on a specific site of investigation that explores how individuals engage with and negotiate contemporary algorithmic personalisation practices. The site of investigation focuses on 'digital personal assistant' Google Now (Google Now, 2014) as an example of algorithmic personalisation. The chapter draws on the accounts of six Google Now users who were interviewed four times over the space of six weeks, and so the study differs from the previous two in that it was designed to capture participants' sustained yet developing engagement with an example of a technology that heavily relies on algorithmic personalisation. The chapter is structured around the themes that emerged as part of the study. These themes include; participants' framing of the app as 'smart' and 'impressive' even as the app failed to be 'useful'; participants' invocation of self-blame in order to explain the app's failures; their faith that Google would uphold its side in the data-for-services exchange that has arisen at points in this thesis; and finally, participants' expectations that the app could and should know them, anticipate them and personalise for them to an extraordinarily complex degree. Furthermore, this chapter proposes that Google Now's interface and algorithmic protocols construct and evoke an ideologically normative 'ideal user' in order to present 'personalised' information. These themes come together to produce what I define as an

enduring sense of 'trust' that these participants bestowed not only in the app itself, but in Google as a broader technological, socio-cultural and commercial force.

It is important to note that all participants in this study were 'freshers' – first year undergraduate students enrolled in a digital media studies module. As such this study is underpinned by a methodology that seeks to acknowledge and build on these participants' simultaneous development as Google Now users and as developing media studies scholars, to explore the ways that their critical skills intersect with their sustained engagements with this personalisation app.

The former title quote above is taken from the launch video accompanying the roll-out of Google's newest search engine manifestation: Google Now, a component of the Google Search mobile app and 'intelligent personal assistant' designed to feed users 'information that is relevant to them' (Google, 2104) as and when they need it. Google Now promises to algorithmically deliver this information in 'one simple swipe', offering to the user 'cards' containing the information that Google has deemed worthy of *need* 'throughout their day' – such as commute times from 'home' to 'work', traffic and location updates, TV and movie recommendations, 'photo spots nearby' and stocks, sports, flights and weather data.[69] As the quote suggests, unlike the established Google Search widely used in computers browsers throughout the world, Google Now promises frictionless, pre-emptive information retrieval that supposedly circumvents the need to actively input a search query in order to receive 'relevant' information – an apparently now unnecessary moment of user-initiated action upon which Google Search has conventionally had to rely. As Chapter Two explored, contemporary digital assistants such as Google Now claim to assist users by offering an efficient and convenient information management service that imbues the system with some autonomous

[69] These cards are structured to correspond to the following categories: Birthdays, Events Nearby, Flights, Gmail, Movies, New Releases, News Updates, Next Appointment, Photo spot, Places, Public Alerts, Public Transport, Topic updates, TV & Video, Sports, Stocks, Traffic, Travel, Weather and Website Updates (see figures 8-12 for examples).

decision-making capacities. In encompassing these decision-making capacities, Google Now presents the development of a new (if somewhat flawed, as this chapter explores) stage towards pre-emptive, personalised information retrieval wherein, in the company's own words, Google can now 'give you the information you need throughout your day, *before you even ask'* (Google, 2014, my emphasis).

Google's predictive promise is at face-value a neat rhetorical tagline designed to appeal to busy mobile users 'on the go' (according to the study's participants at least, as I shall explore). However the statement also exemplifies Google's long-standing conceptual ideal; that is, to 'know' a user's needs, desires and 'intentions' (Jarrett, 2014: 17) in order to provide the most efficient and convenient forms of search retrieval. As I will explore shortly, scholars such as Hillis, Petit and Jarrett (2013), Jarrett (2014) and Campanelli (2014) have noted that this conceptual ideal gives rise to a host of potentially profound philosophical, theoretical and socio-political implications for the users aggregated and constructed by this recursive system. Google Now's 'predictive powers' (Google Now, 2014) also signify an important shift in terms of the human/ non-human agency model with which it has previously operated, wherein the autonomy usually afforded to the user in searching for 'relevant' information is instead afforded to the app; making Google Now an exemplary form of algorithmic personalisation. This shift raises a range of critical questions relevant to this thesis; what does it mean to attempt to realise the task of giving a user 'what they want', 'before they even ask'? What forms – and formats – of information does Google Now deem worthy of personal 'need' to any given user's everyday trajectory? How does that user negotiate, appropriate and understand this apparently necessary information? In what ways, if any, is the user's lived experience informed, altered, and even constructed by the pre-emptive inferred 'experience' that Google Now attempts to map onto an individuals' daily lived trajectory? This chapter draws on the accounts of six Google Now users, who engaged with the app over the space of six weeks, to explore these users' engagements with the app's 'predictive powers' (Google Now, 2014).

Theorising Google's pre-emptive vision

In attempting to give its users what they need before they even ask, Google Now signifies an important step closer to Google co-founder's Larry Page and Sergey Brin conceptual ideal; that is, to deliver to users a kind of frictionless search mechanism in which a user's informational needs and desires can be met without any labour on the user's part. In 2004 Brin envisioned:

> Right now you go into your computer and type a phrase, but you can imagine that it could be easier in the future, that you can have just devices you talk into, or you can have computers that pay attention to what's going on around them and suggest useful information (2004, cited in Levy, 2011: 67).

Brin and Page's 'dream' of designing a system with the user's wants and needs in mind was not a concept unique to them – as Oudshoorn, Rommes and Stienstra note, the late 1980s marked a shift in 'the paradigm in design theory' away from 'technology-oriented design' and towards 'user-oriented design' (2004: 30). Brin and Page's ideal thus follows a dominant belief of the time in that user-oriented design approaches placed users' needs, interests and intentions at the heart of the design process. However, as Oudshoorn, Rommes and Stienstra (2004) and other design theorists such as Law have noted, this emphasis on user-oriented design can be problematised by design structures and processes that 'configure the user' (Law, 1991) through assumed ideological norms that constructed an 'imagined' user. Implicit in these structures was a user assumed to be 'everybody' but that in reality reflected and maintained pre-existed socio-cultural assumptions that the ideal user was white, male, and middle class. In other words, through this normative design process 'technologies become adjusted to certain groups of users and not to others' (Oudshoorn, Rommes and Stienstra 2004: 32), whilst even as this process is assumed to be 'designed for all' (2004: 30).

As I will explore in the latter sections of this chapter, such ideological assumptions of the 'ideal user' can very much be applied to Google Now's interface. Here however it is important to note that though Brin and Page's dream of user pre-emption in some ways followed dominant paradigms of user-centred design, their concept also marks a departure from user-

oriented design in that rather than a *human-led* design process configuring the user, in their predictive ideal the user is instead configured through a process of *algorithmic inference*;[70] the user could be 'known' and catered for through data tracking and algorithmic mechanisms.

Campanelli identifies this shift towards Google's pre-emptive search mechanisms at work in Google's autocomplete function and in Google Now:

> Google Now.... uses the potentialities of the most popular search engine, along with localization and access to personal user data, to automatically offer information and news about the context in which one is situated. The idea is that such tools, which automatically organize the information we need, 'free' us, as they allow us to focus on what's important to us. Such a view implies that, according to Google, information selection should not be considered a core activity in the lives of human beings, but a burden that one may well leave to machines and their algorithms (2014: 43).

The 'unburdening' of informational decision-making to personalisation algorithms thus takes on a problematic status – that is, though the 'outsourcing' of this decision-marking process might be time-saving for the user, Campanelli notes that such outsourcing works to undermine user control and autonomy. As Hillis, Petit and Jarrett (2013) acknowledge, this kind of imagined computational information retrieval system implies that 'achieving perfect relevance would be akin to the technology seeming to read one's mind' (2013: 55). These theorisations help to highlight that the conveniences of pre-emptive search come with the disconcerting possibility that such a system actually 'promises a limited form of virtual sovereignty' (Hillis, Petit and Jarrett, 2013: 22), wherein the searcher and search system become blurred and even unified. Thus, as explored in Chapter Two, Google's pre-emptive search systems open up the possibilities that algorithmic personalisation might create a struggle for autonomy between user and system even as it purports to 'aid' users.

[70] Manovich's (2013) work suggests that this process again is not specific to Google; he notes that since the 1990s, the computational form rather than the user has been increasingly awarded control over the decision-making and interaction processes build into computational architectures.

Jarrett notes that in order to provide pre-emptive search, Google must attempt to collect and amass a 'database of [user] intention' (2014: 17) – that is, 'a massive clickstream database of desires, needs, wants, and preferences that can be discovered, subpoenaed, archived, tracked and exploited for all sorts of ends' (industry analyst John Battelle, cited in Jarrett 2014: 17). Jarrett argues that this database of intention could theoretically lead to a situation in which the 'algorithmic identity' that Google constructs for each user effectively shapes and regulates the web experience of the identity that it is supposed to simply reflect. She writes:

> In [Google's pre-emptive] mechanisms, the intentions ascribed to me are fed back to me, working to inform my ongoing search articulations. A feedback loop emerges in which presumptions about activity, based on Google's assumptions about users' intentions, go on to inform a user's experience of, although not necessarily their engagement with, the web (2014: 23).

Thus these kinds of predictive search strategies do not simply attempt to 'read one's mind'; they hold the potential to inform and even construct the subjectivity that they are supposedly only 'reading'. With Google Now however, this feedback loop – and its consequences – extend beyond the 'web' to the domain of everyday life. After all, the predictive promises of Google Now do not just look to provide pre-emptive search, they also look to pre-empt a user's commute to work, their dinner plans, their evening's TV schedule, and their trajectories around their (commercial) local environment.

Jarrett recognises that these user 'intentions' – the affective, conscious and unconscious driving force embedded in every user search query – can at once be easily commoditised by Google but also are always forever unknowable. She writes:

> If Google can still be called a database of intentions, it is only of extensive manifestations – the textual, cognitive, discursive trace of digital archives…. Google cannot actually capture the meaningful, inalienable aspects of my intention. These cannot be alienated from me. They cannot be expropriated from me (2014: 22).

Jarrett notes however that though Google's goal to capture user intentions is ultimately unreachable, its *attempt* to do so has material socio-economic effects; she states that 'once alienated, my intentions have the power to act upon me, autonomously of my desires, meanings or interests' (2014: 19).

It is not only Google's pre-emptive search mechanisms that have attracted scholarly attention. As scholars such as Beck et al (2011), Van Couvering (2007), Andrejevic (2013) and Vaidhynathan (2011) note, the increasing 'Googlization of our lives' (Vaidhynathan, 2011) – the ubiquitous, deceptively neutral and socio-culturally integral place that Google currently holds in contemporary information societies – has been subject to much academic critique. As scholars such as Hillis, Petit and Jarrett (2013) have noted, part of Google Search's current popularity and market dominance can be afforded to the fact that most web users feel that Google Search is simply convenient and efficient. In the age of 'infoglut' (Andrejevic, 2013) Google has provided web users with a welcome solution to this problem of seemingly infinite information overload.

By offering respite from this infoglut Hillis, Petit and Jarrett argue that Google has been elevated in popular discourses surrounding informational retrieval to the supreme status of a kind of 'divine mind' (Hillis, Petit and Jarrett, 2013), infallibly capable of finding, organising, managing and filtering what the user 'wants' amidst this sea of (dis)information. The treating of these seemingly omnipotent automated technologies as 'god-like' is not exclusive to search engines – as Noy's (2015) work on 'drone metaphysics' highlights, automated technologies such as drones are afforded by political advocates and in popular discourses an almost divine status that fetishises the external and unknowable forces that appear to lie behind automated and autonomous technologies (2015: 16). Furthermore, as Burns (2015) notes and as I will further explore, this 'faith' in media technologies – despite the limited affordances of developing technologies (such as Google Now) – allows users to discursively 'redraw the

boundaries' (2015: 9) of faulty objects to retain their faith in that object. I will be drawing on some of these scholars throughout this chapter, as well as the work of Livingstone (2014), De Certeau (2002) and Lapenta and Jørgensen (2015) to attempt to take into account the lived experiences of Google Now users whilst analysing Google as a socio-technical force and actor.

Method: project design

Reported usage of Google Now is fairly widespread: the app boasts over 1 billion potential 'active users' worldwide on Android phones alone (Techcrunch, 2014).[71] After initial activation of the app, any user-initiated customisation of the app is minimal[72] – the user can customise content if they wish, but Google Now will attempt to infer information about the users' everyday trajectory *regardless* of whether they choose to input data explicitly (for example their home address), or confirm the accuracy of the Google Now's predictions (for example by confirming that Google Now has correctly inferred their home address). This study sought not to engage Google Now users as a representable population, but to consider the experiences of a small number of individual users through an in-depth – loosely ethnographic – but certainly highly qualitative methodological approach.

All participants of the 'Google Now research project' (as the project was labelled during participant recruitment) were recruited from a Digital Media Studies module at a UK university. These individuals were invited to participate on the grounds that they did *not* necessarily identify as 'Google Now users' – unlike the self-identified Ghostery users or Facebook app users who participated in the other two studies that constitute the sites of

[71] Figure based on 'current Android activations' of Google Now over a 30-day period (Techcrunch, 2014). However, some of these billion users might only be using the app to perform more 'traditional' user-initiated Google Searches rather than using the predictive search functions, as these two forms of search are standalone features in the app. Though the one billion figure is therefore questionable, the *potential* number of users using Google Now's predictive functions is very high.

[72] Explicit engagement with the app is especially minimal for Android users, who will find the Google Search app already preloaded onto their mobile when they purchase their phone. All Android users have to do to use Google Now is 'activate' it. For iPhone users, initial installation is slightly less 'frictionless' – they must download the app from the iTunes app store.

investigation for this thesis. By asking students – some of whom had never before used the app – to participate, this study hoped to capture the engagements of potential *non*-users of an algorithmic personalisation practice. As Baumer et al. note the 'non-user' – that is, 'a particular individual or group of individuals…. [who] are unable or choose not to use some specific technology or technological system' (2015: 2) – is perhaps the most elusive mode of socio-technical subjectivity to identify and theorise, yet 'focusing explicitly on non-use can function as a dialectic manoeuvre, an inversion that provides a novel perspective on, and potentially fuller understanding of, the complex, multifaceted relations among society and technology' (2015: 2). Though two participants had limited interaction with the app prior to the study, and all participants did end up 'using' Google Now as part of the study, I believe the study touches upon this notion of 'non-use' since the participants were consistently disappointed that they could not find a 'use' for Google Now, as I will explore.

All participants were students entering their first term of their first year at university. Their enrolment as Digital Media Studies students raised a number of methodological considerations; the most pressing being that the content of their Media Studies module – which covered topics such as online privacy, search engine politics and even the socio-political implications of personalisation – was likely to inform and effect participant engagements with Google Now, and their interview responses. To account for this, the study was conducted in the first few weeks of the students' first term at university.[73] However, as I will further explore, the mutual development of students' critical learning with their use of the app transpired to be valuable site of exploration in terms of their engagement with Google Now; that is, participants'

[73] Nonetheless, some students may have had some exposure to critical media studies through their A levels or other means. However, the motivation behind interviewing them early on in their university studies was not so much to catch them as 'clean slates' in terms of their critical understanding of digital media - as Maynard (1994) highlights and as outlined in Chapter Three, all research participants are situated within specific socio-cultural contexts and so trying to capture 'clean' experience would be a misguided methodological assumption. I hoped instead to chart their simultaneous development as new critical media scholars and as users of the Google Now app. I do believe however that trying the same methodological approach with second or third year students would have been less successful – their experience of university life and their developed attitude toward critical media studies may have prompted the interview participants to 'perform' their expertise as scholars rather than express their engagement with the app as users.

development of 'expertise' intersected in a number of nuanced, reflexive and yet often contradictory ways with their engagement with the app.

All in all, six participants took part in the full study, who attended four interview sessions over the space of six weeks (please see Appendix A for study timetable). Though at first I intended all participants to be grouped into focus groups, a number of volunteers dropped out before the first session and so final interview dynamics were structured as follows:

Table 1. Participant interview set-up	
Focus Group	**Tariq**, 18, Dubai, lives on campus **Rosie**, 19, UK, lives on campus **Heena**, 18, Malaysia, lives on campus **Lisa**, 18, UK, lives on campus
One-on-one interview 1	**Giovanni**, 18, Italy, lives on campus
One-on-one interview 2	**Laura**, 18, UK, lives on campus

For further information on interview set-up and structure please see Appendix A.

One methodological consideration that I also want to highlight here was initial muted responses I received from participants to my semi-structured interview questions. In interview Session One it transpired (perhaps unsurprising) that non-users of technologies made for somewhat disengaged research participants – despite constantly checking their phones throughout the session, participants simply did not seem to have much to say about the app. This muted response in the first session seemed to be compounded by the participant/ research dynamic of this particular study – as discussed in Chapter Three, I was a tutor, and they students[74] and therefore their engagement with me seemed accompanied by an expectation that I was to direct their engagement with the app, with each other and with myself in ways not expected in the other interviews I had conducted for this thesis. As a result the

[74] This dynamic may have been reinforced by they fact that interviews took place in a pre-booked seminar room. However as the students all lived on campus it made sense to use a seminar room to conduct interviews – this meant I could guarantee the same quiet, free space every week. See Sin (2003) for further discussion on space and interview dynamics.

interviews developed from straightforward semi-structured questions in Session One to incorporate other exercises in Sessions Two, Three and Four. For example in Session Two I conducted a structured 'walk-through' (Kennedy et al., 2015) of Google Now's interface and functionality and also asked them to write down a short diary of what they had done the day before, and then discuss if/ how Google Now has aided them/ not aided them. In Session Three we conducted a 'walk-through' not only of Google Now itself but of Google Ad Settings which triggered some very interesting discussions of being 'recognised' by Google, as I will explore. I also conducted informal experiments with two participants – Tariq and Laura – and their use of Google Now, as I will explore. All-in-all, of the three studies that comprise the body of this thesis, this study proved to be the most methodologically challenging and yet (again methodologically-speaking) the most dynamic and interesting.

To return briefly to the notion of 'non-use'; it was important prior to the study to gauge the level of engagement that participants already had with Google Now. Two of the students – Tariq and Giovanni – had used Google Now, though both told me that they did not use it often. The other fours students – Laura, Rachel, Lisa and Heena – had never used Google Now.[75] These four students were split in two sections: two participants, Heena and Rachel, who could customise the app in whichever way they wished and confirm the app's inferences, and two participants, Laura and Lisa, who were at first not allowed to customise the app or confirm any of the app's predictive interferences. Acknowledging and managing the level of usage that these participants had with Google Now transpired to be a crucial component in relation to some participant responses – for example Laura's insistence that the app would work 'better' if she had been allowed to customise it, as explored later. The following analysis subsections explore some of the themes, negotiations and responses that emerged from the interview sessions. I have tried to keep them in broadly chronological order.

[75] Giovanni and Tariq both have Android phones that come pre-installed with Google Now, whilst Laura, Heena, Lisa and Rachel have iPhones, wherein they had to download the app to gain access. This may explain why the latter four participants had not used the app before.

Part II

'Cool', 'impressive', 'smart' – but 'useful'? The trust that Google is 'relevant'

To turn to the study itself, as 'freshers', all six participants new to the university (and surrounding university town) and all lived on campus. Participants were asked to activate Google Now a week in advance of the first interview session, and were asked to check Google Now frequently over the course of the week to see what 'cards' Google Now had shown them. They were asked to take screenshots of these cards and email them to me, and were required to open Google Now at the beginning of each interview session to see what the app was displaying. For all participants Session One (and each subsequent session) began with the question 'what cards has Google Now shown you this week'?

In the first session this question elicited the general consensus that Google Now mostly showed the participants local weather updates, traffic information to and from 'home' and 'work', and 'places nearby' (these 'places' being exclusively restaurants and cafes). The most frequent card shown to participants was local weather, followed by a 'home' to 'work' commute time, which displayed a mode of transport (car, train, bus) inferred by Google Now based on the GPS location and travel trajectory of the users in question (see figure 8-10).

Participants' overall responses indicated a sense of disappointment with these initial engagements with the app – all participants said they thought this information was lacking or 'not enough'. For example Laura told me that Google Now had shown her weather, restaurants, and 'my location, but that was about it'. Whilst Lisa also stated 'Yeah I just got the weather', and Rachel in both interview sessions One and Two said Google Now showed her 'absolutely nothing' (apart from the weather) – a source of much frustration and dismay for Rachel, as I will explore shortly. Tariq also echoed the sentiment that Google Now did not offer much, stating 'it just gave me information about the traffic'.

Figure 8. **Figure 9.** **Figure 10.**

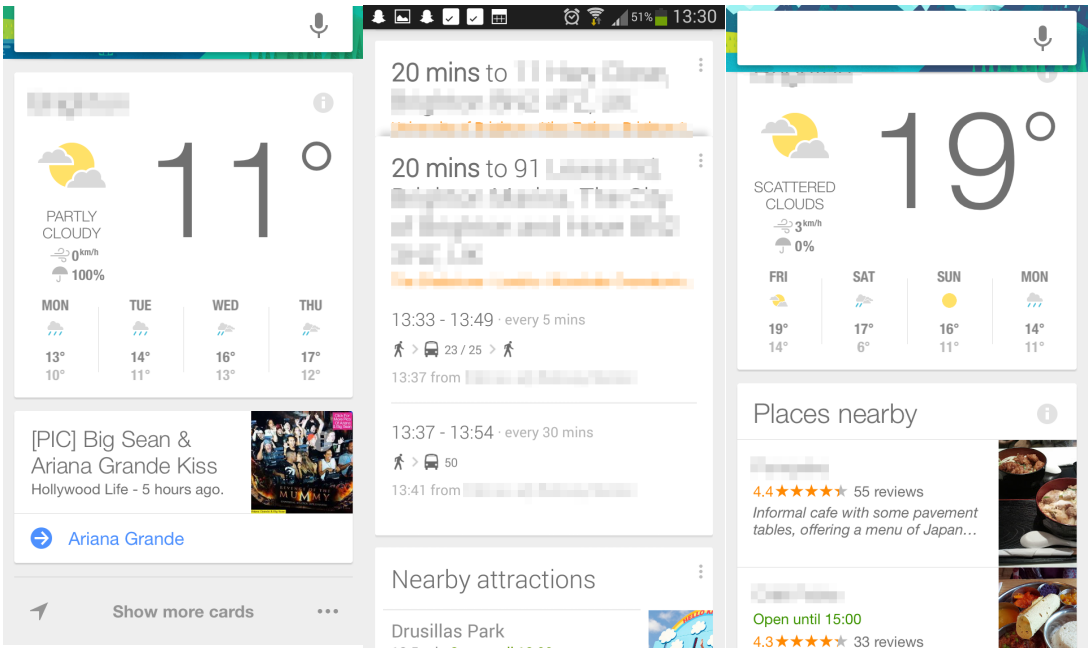

Figure 8: Heena's screenshot of the local weather. **Figure 9:** Tariq's (wrongly) inferred 'commute' from 'home' to 'work' (bearing in mind he both lives and 'works' on campus). **Figure 10:** Laura's 'local weather' and 'places nearby' cards.

In Session One then, Google Now did not seem to be offering the participants much in terms of information that they 'needed throughout their day'; traffic, location and weather updates did not in these initial stages seem to fulfil their desired use or expectations of the app. However, this failure to deliver 'useful' information did not stop many of the participants from expressing positive sentiments about the app. For example when I asked Laura if she had found the 'nearby places' card to be helpful (which showed her Japanese restaurants near to her location), she replied:

> Laura. Yeah it was helpful. It was helpful to have it there.
>
> *Interviewer: Did you use any of the restaurants?*
>
> Laura: No [laughs].

Laura's statement that Google Now was 'helpful' was quickly contradicted by her self-conscious answer that no, she did not in fact actually use the information that was provided to her – she went to an alternative restaurant instead. Similarly, Heena expressed positive

sentiments regarding Google's predictive powers. For example when I asked Heena 'how do you think [Google Now] manages to predict where you work and where you live?', she replied:

> I think it predicts quite well because I mentioned that I was in Southville[76] but then it managed to guess that I was in Southville Lane which is quite good, and then it guessed where I had my classes, which is more interesting.

Aside from the fact that Heena does not really address the question (instead of explaining *how* she thinks the apps predictions work, she states that Google Now predicts 'quite *well*'), Heena seems to be most 'interested' by Google Now's inferences, which she deemed to be 'quite good'. What is determined to be 'good' here is simply the fact that Google Now has predicted something correctly – it is not that the app has been 'helpful' by showing Heena where she has to go. After all, Heena already knows where she is, and where her classes are: Heena's praise seems to lie in the fact that Google knows this too.

These positive sentiments were also expressed in Session Two. For example Tariq, who had in Session One had also found that Google Now mostly just showed the weather and locations nearby, became excited when he discovered that this week Google Now had correctly inferred he had taken the train the day before:

> Tariq: Oh look! It's got the train station on there now because I took the train yesterday! That's good!
>
> *Interviewer: Are you taking the train today?*
>
> Tariq: Um no I don't think so, I'm not going to, well I am going to go into town but I think I'm going to take the bus.

The fact that Google's cards display information that is ultimately not useful to Tariq here then seems to be inconsequential – he remains impressed by Google Now's offerings, despite this lack of tangible use.

[76] Location names have been changed to ensure participant anonymity.

Here then, it is Google Now's tracking and predictions *in and of itself* that are deemed by Laura, Tariq and Heena to be 'good', 'smart', and 'impressive'. It seems these participants' positive sentiments regarding Google Now refer directly to Google Now's data tracking and surveillance strategies and subsequent predictive *powers*, rather than the helpful *outcomes* or tangible usefulness of those predictive powers on their everyday trajectories**.** It is the possibilities that Google Now offers, rather than the realisation of those possibilities, that seems to trigger the positive comments.

How can these positive sentiments – even in the face of disappointment – be theorised? As Wyatt notes in relation to non-users and the internet, emerging technologies are often publicly framed by institutions, media, policy makers and even as users as 'necessarily desirable' and therefore deemed necessarily useful (2005: 68). Similarly, Best and Tozer's qualitative study on user resistance and appropriation of new technologies identifies a process in which users find a way to accommodate new technologies into their everyday lives, even as that technology fails to be useful (2012: 14). Such a process involves an element of 'self-blame' (Best and Tozer, 2012) as I will explore in the next section. Here though I want to emphasise that it is the predictive possibilities of Google Now that are demarked as 'cool' and 'impressive', even as the app fails to function in a way that these participants expect. I do not mean to suggest however that if the app *did* function as 'useful' then a critical interrogation of the app would not be valuable – as explored in Chapter Two, critical interrogations of the 'successes' of algorithmic personalisation expose a host of socio-cultural implications in regards to user control, commodification, autonomy and universal experience. I will explore the critical implications of Google Now's 'successes' later in the chapter, but here it seems that these participant responses are largely echoing Wyatt and Best and Tozer's observations that emerging

technologies are assumed to be beneficial, even when the technology fails to offer up affordances[77] that meet the expectations of the user.

Expectations and excuses: the trust that Google will provide

As well as finding positive sentiments in Google's ultimately unhelpful inferences, during the first few weeks of the study participants offered a range of explanations as to why Google Now's interface lacked so much useful information. For example, in Session One Tariq blamed '3G' for Google Now's incorrect prediction of his 'home' address, and Rachel stipulated that her inability to connect to the campus wi-fi might be the reason that Google was showing her 'just the weather'. Alternatively, Heena offered the following reasoning:

> Well, for some reason I only have the weather, but I guess it's because I'm a new user, and I don't use it a lot and I don't even customise it.

According to Heena then, Google Now's apparent failure to provide useful information was not due to a failure on Google's part, it was rather *her* status as a 'new user' that proved to be responsible for the app's shortcomings. Lisa also blamed her lack of engagement with the app for Google Now's failure to deliver more cards, stating that: 'I'm not using mine properly, if I had more in it then it would be helpful', referring here to the fact that, as part of the study's initial conditions, she was not allowed to customise Google Now in any way. Similarly, in Session One of her one-to-one interview, Laura seemed adamant that her issues with Google Now could be put down to the fact that she was not allowed to personalise the app, as evident during the following exchange:

> *Interviewer: Why do you think that Google Now chooses to show you things like where you work?*
>
> Laura: Probably for the convenience factor, and to make it more efficient I guess, to show you different routes to get there and to show you personalised ways of to try and help you get to places…

[77] By 'affordances' here I mean participants' perceived tangible uses and functions of the app. Gibson (1986) notes that the notion of 'affordance' is politically contestable and conditioned by dominant ideological structures. As stated I do not mean to suggest that in being 'useful' Google Now would be unquestionably advantageous; I simply wish to ascertain the *kinds* of interactions that Google Now allows in regards to the specific lived experiences of these participants.

Interviewer: Has it actually helped you find anywhere?

Laura: No, no [laughs] it said where I worked but it didn't show me how to get there. Yeah I think that's because I didn't put any of my personalised details in, I think when I do it probably will.

By Session Two Google Now had not shown her anything more than weather and travel updates. Again when I asked her if she used the app that week she replied:

Just, actually just for the weather because there wasn't anything that came up at all, apart from yeah, that was really it. But I think I would've used it a lot more if I did have, if I was able to put in stuff that was relevant.

Due to the app's lack of cards and Laura's assertions that the study was limiting her use rather the app, we agreed that at the end of Session Two, Laura could customise the app in any way she wished in order to try and improve the app's functionality. Consequently Laura's hopes were in some ways fulfilled[78] – her user-initiated customisation of the app resulted in the display of many more cards. However, the reasons here offered by participants for app's initial failures seem thus to displace the 'blame' for the Google Now's lack of functionality anywhere *but* Google Now itself – Google Now has failed to provide because of 3G; Google Now has failed because of the campus' wi-fi network; Google Now has failed because of the disengagement of these users *themselves* with the app.

Where might this reluctance to blame the app itself for its shortcomings come from? As a plethora of scholars have noted, Google's place in most web users' everyday lives extends far beyond simply a functioning as search engine – it is *the* search engine, its worldwide use so

[78] In some ways Laura's theory that Google Now would work better once she was able to personalise it was proved right. For example, in Laura's third interview she stated 'Last weekend I went to see my family in Amsterdam, and so I had to fly there… and because I'd said that [Google Now] could access my email, it basically showed me this [Laura shows interviewer the 'flights' card]… so it's basically saying that my flight was on time and stuff, and all the details about the flight, and what terminal I'd arrive in and what time, so I found that quite cool, I was quite excited about that.' Google's inferences are once again 'cool' and Laura seemed pleased to report that Google Now had been 'really good' since she had been able to customise it. Again however, the idea that Google Now's predictive powers are 'cool' in and of themselves still persists – she told me that the app 'was really efficient, I was in the airport and I opened it and it was just out of curiosity and it said like all the things that I needed about my flight and it was really interesting'.

ubiquitous as to have become ideologically 'naturalised' as a socio-technical practice. As Beck and Stalder write: 'Google not only dominates markers, it also dominates our minds – to such a degree that it is not to conflate the generic issues of search engines with the specific practices of Google' (2011: 7). Here then the dominance of Google as *the* search engine seems to be invoked in participant responses; their trust in Google lies on the assumption when it comes to information retrieval, Google should – and does – just *work*. Such theoretical arguments were supported by participants' own testimonies regarding search engine use: in the induction stages of the study, all participants reported that they used Google Search as their only search engine.

Of course, the fact that Google Search has for the past few decades successfully met and managed its users' expectations does not exempt the company from critique – Hillis, Petit and Jarrett highlight that the very ideas of 'efficiency' and 'convenience' are themselves a 'meta-ideologies of the contemporary technised, consumerist conjecture' (2013: 5). In participant accounts so far, Google Now's 'efficiency' and 'convenience' is rendered questionable by the lack of information Google Now provided to participants; and yet participant trust that Google *could and should be* capable of providing an efficient and convenient service persisted. It seems then that Google's reputation not just precedes itself; it actively constructs and manages these user expectations, even in the face of failure.

In his analysis of tablet use in academic labs, Burns describes a similar displacement of blame invoked by tablets in which, in order to retain their perception of tablets as 'perfect' techno-social objects, 'users… responded to unexpected failures of their devices by tactically redrawing the boundaries of the object so as to eject the faulty element' (2015: 9). In the context of the Google Now study, the Google Now app remains far from 'perfect' in the eyes of the participants – and yet the reluctance to see the apps' failures as a product of Google Now itself persists. This 'redrawing' of Google Now to eject its faults did not last however; as I will explore, Google Now was eventually taken to be (still somewhat mysteriously) at fault.

Privacy and data tracking: The trust that Google will protect

In the first two sessions then the apps' front-end capabilities were described as 'impressive' yet consistently failed to live up to the participants' high expectations. I will return to these expectations shortly, but first I would like to turn to the back-end data tracking capabilities of the app. From Session One onwards, in both the focus group and in the two standalone interviews, the fact that Google Now *was* tracking participants in some way was established very early: all participants knew that Google Now could track their geolocations and search history. How then did they feel about Google mining and tracking them?

It transpired from Session One onwards that Google Now showed more cards to Heena than it did any of the other participants – even though Heena had not customised the app or confirmed the correctness of any of the app's inferences. Heena was perpetually perplexed that Google seemed to 'know' a lot about her – for example Google Now seemed to be capable of tracking her online television watching and inferring shows based on her viewing habits (see figures 11 and 12). As well as describing her (comparative) bounty of cards as 'smart' and 'interesting' Heena also described Google Now as 'like your own personal stalker'. When asked 'why do you feel like that?', she stated:

> Because it can tell you where you're going and because it can assume what you're like and I think it's kind of scary at times because… maybe it can use your information like against you it's like identity theft and it's like really scary, and identity is all you have, it's yours, and it's like a little bit scary.

Heena's description of Google Now as 'scary' was offered in Session One alongside more positive descriptions of the app's predictive powers. This somewhat contradictory juxtaposition persisted throughout the study – by Session Three Heena was still describing Google Now as a 'personal stalker', and she also expanded on what she meant be 'identity theft'. When explaining why she would not want Google Now to know her 'permanent address', she stated:

> Who knows, maybe there's someone in Google, like hackers, like they might just be able to track someone down, like they know everything about you, so they might know like incriminating things, and then they might want to target you. So if they have your permanent address, then you're screwed.[79]

Figure 11 **Figure 12** **Figure 13**

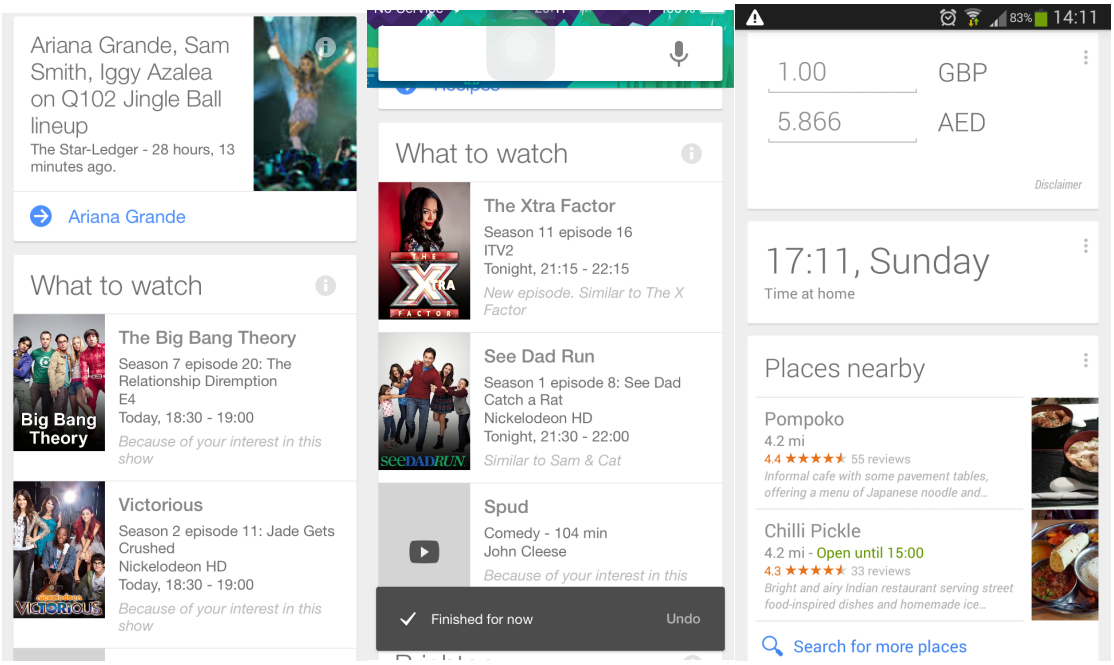

Figure 11 and 12: Heena's cards displaying Google Now's 'what to watch' recommendations, which Heena described as suited to her interests but 'scary'. **Figure 13:** Tariq's currency converter card, displayed top of the screen.

Here then Heena seemed to be less concerned by Google's own treatment of her personal data, and more worried that 'incriminating things' about her might fall into the hands of 'hackers' – thus Google *itself* is again framed as trustworthy. Furthermore, in Session Three Tariq stated:

> Literally what would happen if I gave up all of my information to Google, I feel like I have nothing to hide, but then there's certain things that I do that I wouldn't want my parents to know.

In some ways, Heena and Tariq's sentiments echo the findings of wider qualitative and quantitative studies that analyse young people's responses to online privacy concerns (Lapenta and Jørgensen, 2015). As Lapenta and Jørgensen note, the notion that young people are 'digital natives' – that is, users who are 'born' into digital media technologies and therefore fully

[79] Heena said that she does not mind that Google Now has her campus address, it was only her more permanent home address that she felt needed protecting.

equipped to deal with the negotiations and expertise needed to successfully navigate them – is often mobilised in policy making and media accounts to suggest that for young people 'privacy, is, so to speak, "no longer the social norm"' (Lapenta and Jørgensen, 2015: 4). They note however that there is a building body of research that suggests this is not the case: 'On the contrary, these studies of young people's practices on social media platforms illustrate the emergence of a new privacy norm that corresponds to the structural conditions of online social life' (2015: 3). They note however these 'structural conditions' tend to frame online privacy as a matter of control over their self-representation online – that is, control of their photos, and who has access to representations of their self, 'whereas potentiation privacy risks related to the state or private companies received limited attention' (7: 2015). This is at work in Tariq and Heena's responses to privacy: it is not Google itself that represents a threat, but the threat to self-representation that matters more, either from hackers looking to steal Heena's identity, or from losing control over what Tariq's parents do and do not see. Again Google as a commercial, socio-technical force is discounted from any privacy risks – Google will protect, even when it is responsible for the data tracking upon which pre-emptive search relies.

The data-for-services exchange: the trust that Google is worth it

This was not the only privacy implication expressed by participants: throughout the study participants acknowledged Google Now's mobilisation of data-for-services exchange that has emerged at points throughout this thesis and which scholars such as Bassett assert is a key driver of the contemporary web economy. For example in Session One I asked Tariq if he minded that Google Now showed him pictures of 'places nearby', and he response almost immediately became a matter of privacy in exchange for the app's services:

> Tariq: For me it's not really a simple answer, so for me so like it's really useful and handy sometimes, like you know with the currency converter, and to tell you what time at home it is because I remember one time I called my parents on Skype it was like 9 here but I realised it would be 12 there because of this, so they probably wouldn't pick up, but um it's useful in that way but then you're also sort surrendering a part of yourself up to

Google right? So, they've got all this power over you, they know so much about you, so it's just really complicated I think.

Interviewer: When you say surrendering, what do you mean by that?

Tariq: Like basically it's information about yourself that Google could potentially use to take advantage of you, I guess that's what I mean by surrendering – well you see I'm just like one person in 7 billion so what interest would they have in me which is why I mostly don't care.

Interviewer: Do you ever feel taken advantage of?

Tariq: By Google? No.

Here then Tariq feels him must weigh up the convenience and benefit of using the app with the threat of 'surrendering yourself to Google'. He rearticulated in Session Three that allowing Google Now to track him involved a negotiation between feelings of 'apathy' and 'fear' of Google's data tracking practices; an uncomfortable juxtaposition also articulated by Laura, Lisa and Rachel. For example, Laura, who throughout the study was extremely positive about Google Now, told me in Session Four that she felt that Google targeted 'younger people', who could then be left vulnerable to 'manipulation' by Google. She stated during the following exchange:

Laura: …we're more reliant on [Google] I suppose and we use it for a lot more things than older people would I would say, and so we're more, we don't have as much knowledge on it so therefore we kind of don't really realise how it's manipulating us.

Interviewer: Do you mind about that sort of thing?

Laura: No not really.

Interviewer: Why don't you mind?

Laura: That it manipulates us?

Interviewer: Yeah.

Laura: Well I think it's mainly that they manipulate us in order to, like for marketing purposes I suppose, and for advertising, to personalise it, so it's not really to invade your privacy on purpose, it's for their own business purposes in order to benefit the company, it's not to stalk you, so [pauses] And anyway it's helpful.

Of all the participants Laura displayed the strongest faith in Google Now and told me that she 'definitely' trusts Google (even after studying the privacy implications of data tracking as part of the module, as I will explore). Laura, Heena and Tariq's sentiments support another point made by Lapenta and Jørgenson in regards to young people's treatment of privacy online. They state that for young people 'the "repurposing" of their data (data mining, commercial use) is perceived as a precondition for social participation' (2015: 8). In other words – 'signing off privacy rights to the social network was seen as a necessary price to be paid in order to participate' (2015: 8). However, I want to make an important point here: Tariq and Laura's responses clearly also draw parallels with the data-for-services negotiations that some of the Ghostery interviewees also recounted. As such it seems that is not only 'young people' partaking in these exchanges: it is *all* web users who find themselves positioned as 'data providers' (Van Djick, 2009), even those resolutely interested in protecting their privacy. A explored in Chapter Two and Chapter Four, and as scholars such as Bassett (2013) note, this exchange lies at the very heart of many of the contemporary web's most successful free-to-use services; an exchange that is premised on the notion that there is an (economic) need to 'know' and 'anticipate' users.

What happens when the exchange fails? An experiment in data-for-services

How does this exchange of data-for-services intersect with the failures of the app to provide useful cards? Though this sacrifice of privacy for services was deemed 'worth it' for most participants, there is a disconnect here between participants' acceptance of the data-for-services 'contract' and their assertions that Google Now was not providing the level of service they expected. When it came to providing a personalised service in exchange for data, Google Now did not seem to be 'holding up its side of the bargain', so to speak. To explore this, I want to briefly expand on Tariq's engagement with a 'card' that he *did* find useful: that is, the app's 'currency converter' card (see figure 13). Tariq, who

already had Google Now activated on his phone prior to the study, stated that he finds this card particularly useful:

> Right now [Google Now] still thinks I'm in Dubai, Dubai is where I live, so it thinks I live in Dubai but it's says like, it shows me tourist hotspots, and there's like this really handy currency converter.

It became apparent that showing the currency converter was an attribute specific to Tariq's usage of Google Now compared to other participants' usage – and as he states here, Google Now showed him the currency converter because Tariq's 'home place' was set in Dubai (Tariq's home country). Thus, Google Now assumed that Tariq was a tourist visiting the UK, and therefore in need of a currency converter.

This 'card' was indeed useful to Tariq – and yet it seemed that that the only reason Google Now had shown him this card was *because* it had wrongly inferred that Tariq was a tourist, rather than an overseas student. Tariq and I speculated that Tariq's currency converter might disappear if Google Now correctly inferred that he in fact now lived in the UK, which up until Session Three it had not correctly inferred (his home address was inferred as in Dubai on the app). Given the lack of engagement that the app had so far afforded to the participants, it seemed fruitful to try and make the most of this useful card; that is, perform an informal experiment to see if the currency converter card would still appear if Tariq's 'home address' was set to his university address. During Session Three it was decided that we should address this hypothesis:

> *Interviewer: Did you end up resetting your home address?*
>
> Tariq: No I was still kinda hoping that [Google Now] would but I'll do it now.
>
> *Interviewer: Is that alright? Can we see, can we see what happens if you reset it?*
>
> Tariq: Sure.
>
> [Tariq manually sets his Google Now 'home address' to his campus address]
>
> *Interviewer: Do you still have the currency converter?*

Tariq: Um no, oh well, I can always find it I guess.

….

Interviewer: How do you feel about the fact that that information is not there any more?

Tariq: Um, well hopefully, it will give me other helpful information. But I can always like customise it so I have the right cards right?

Again displaying faith in Google Now's predictive capabilities, Tariq had been hoping that the app would automatically infer his new 'home address' to be campus; but as the app had not yet performed this algorithmic personalisation, Tariq was happy to initiate it and input his campus address. However, once Tariq had input the 'right' and supposedly 'relevant' personal data into Google Now – that is his 'correct' home place – the information that he had found most 'useful' subsequently *disappeared*.

Despite the card's disappearance, Tariq remained optimistic that the app 'will give me other helpful information' – and hoped that he can 'always find' the currency converter by customising the app to display it once again. However, after some investigation, it transpired that he could not find a way to customise the app and display the currency converter. Ironically then, Google Now's attempts to provide 'personally relevant' information through inference actually has the opposite of the intended affect – guided by the (in this case flawed) logic of algorithmic personalisation, the only 'card' that Tariq found useful to his lived experience was stripped from the app. In this case Google Now's role in the exchange of personal data for personalised services is made highly problematic – the 'personal' information that Tariq gives up to Google actually results in a *less useful* service.

As a methodological approach, this somewhat informal experiment proved particularly fruitful in that through a mutual and on-going discussion between myself and Tariq over the course of the study, it was possible to challenge and subsequently change Tariq's relationship with Google Now. Doing so exposed the failure of the app to live up the data-for-services 'contract'

so common in the contemporary web, and further accepted by these participants. Furthermore, the experiment revealed not only Tariq's faith in Google Now, but Tariq's own self-perceived expertise that he could figure out how to personalise the cards if they were not to be personalised for him. As with the Ghostery participants, the 'expertise' required to successfully negotiate one's way through algorithmic personalisation practices is once again revealed as 'fleetingly held' (Kennedy et al., 2015: 9). I will further explore participants' perceived 'expertise' as developing media studies students shortly, but here I want to highlight that by challenging and changing Tariq's engagement with the app, this experiment proved that though the data-for-services exchange is a 'contract' that currently underpins the economy of monetised web services, in this case the reality of this exchange meant that in 'donating' (Bassett 2013) more data to Google Now, the app was actually rendered less useful, less convenient, and exposed as ironically apersonal.

'I've got so many interests!': the trust that Google 'knows' you

By Session Three it was firmly established that Google Now did track participants, however, the specifics of exactly what Google Now 'knew' about them remained uncertain. As part of Session Three I therefore wanted to discuss with participants the extent of their knowledge surrounding Google's attempt to track them, as well as how they engaged with and responded to such attempts. To do this my original research aim was to access the back-end database of Google Now in order to unpick the data tracking mechanisms the app employed. However after some research, which involved attempting to 'hack' some commercially available Google APIs,[80] it transpired that getting to the back end of Google Now's user database – and especially these users in particular – would not be possible (a methodological limitation that is

[80] There are a handful of Google Now APIs available. For example the Google Now Developer Schema permits access to the Google API to allow those businesses to display to their customers Google Now cards based on reservation or booking info (Google Now Developer Schema, 2014). Alternatively the Google Search Xposed API Mod is non-Google affiliated open source app that allows developers to access Google Now's search capabilities (Google Search Xposed, 2014). After consultation with Sussex-based developers it became apparent that these APIs gave extremely restricted access to back-end user data and would have been unhelpful in trying to discern what user information Google Now gathers. As such API access was not taken up as a methodological approach, as explored further in Chapter Three.

explored further in Chapter Three). As such, it seemed the 'next best thing' would be to discuss not Google Now's database, but the publicly available Google user profiles available through Google Ad Settings (2014).

At the time of the study, Google Ad Settings displays to any Google user their inferred gender, age, language and 'interests', with these categories mined and largely algorithmically determined from a Google user's search history, YouTube history and Google + profile – though again, the specifics of how a user's Google Ad Profile is aggregated is not publicly available (Google As Settings, 2014). As with the experiment with Tariq, discussing Google Ad Settings with these participants meant once again intervening in their engagement with Google, as none of them had seen this service before.

Initial access to Google's Ad Setting profiles elicited mixed reactions from participants. For example, Giovanni was not particularly happy to see that Google had inferred his 'interests', while Laura was happy to be profiled in such as manner, as long as it led to 'conveniently' personalised results (echoing her sentiments explored in the previous section). Conversely, Rachel's reaction upon seeing her profile was at first one of profound disappointment as all of her 'settings' were blank: Google did not know her age, gender or interests. As stated earlier, Rachel had routinely expressed disappointment in regards to the lack of useful 'cards' that Google Now had shown her over the duration of the study. As she explained in Session Three, the lack of cards occurred despite her best efforts to integrate her pre-existing networked services into the app:

> [Google Now is] linked to my YouTube, like I checked what it's linked to, and I like checked my privacy settings, and so I go on YouTube and like nothing pops up and like I literally ask it questions… but it won't give me cards.

Despite Rachel's best efforts, Google Now would not respond to her attempts to be 'noticed' by the app and therefore offer her some 'cards'. The disappointment Rachel felt towards

Google Now's functionality was thus also reflected in her interactions with the Google Ad Settings. However, this time, her despondency had little to do with Google Now's lack of *function*; instead Rachel was disappointed by the fact that Google apparently 'knew nothing' about her – her settings were blank.

This desire to have one's selfhood noticed by Google – to be 'noticed' by the algorithm – draws parallels with the 'tactics' that Kevin mobilised in the Spotify app, as recounted in Chapter Five. There, Kevin worked hard to 'turn to face the algorithm' (Gillespie, 2014: 84) in that he reoriented his actions on Spotify in order to perform a 'better' articulation of selfhood towards his 'invisible audience' on Facebook. In attempting to be 'noticed' by Google Now, Rachel is employing a similar tactic – she tries to 'reorient' herself in order align her actions to suit the algorithmic protocols of the app. However I use the 'tactic' cautiously here; after all, Rachel is clearly not attempting to evade, challenge or resist Google's algorithmic personalisation mechanisms in De Certeau's sense of employing 'tactics' as a form of resistance to oppressive surveillance 'strategies' (1984: 39). Instead, Rachel is attempting to use 'tactics' not to resist Google's algorithms, but instead 'turn to face' them in order to have her actions and activities appropriated by the app. After all, Rachel's epistemic uncertainty of not knowing what data the app needs to work here renders Rachel a 'tactician' rather than a 'strategist' (De Certeau, 1984). She cannot know for certain what manoeuvres she must make to suit the operational logic of the app, and so she must, though 'lacking a view to the whole' (De Certeau, 1984: 39) of Google's algorithmic operations, try to connect her interactions on other platforms to ensure she is noticed by Google Now.

So far over the study, Rachel's attempts have not succeeded – as she states above, she simply could not get the app to show her cards. During the course of the Ad Settings exercise however, Rachel's 'luck' changed: she realised that she had omitted to sign into her Google

account, and that this was affecting her what she could see. On signing into her Google account, her Ad Settings profile was suddenly revealed:

> Rachel: Oh it does know I'm female! That's nice!
>
> [She then finds that Google has also listed some inferred interests]
>
> Rachel: Oh and I have got interests! I've got so many interests!.. I've got so many good ones!
>
> *I: What good ones have you got?*
>
> Rachel: Um like ones that are just actually like, um, are like me, I've got like loads of animal ones, like dogs, wildlife, which I'm super into. I've got rock music, fashion and style, hair care, I've got oh, I've got make-up and cosmetics. I've got metals and mining, and I don't ever do that… I've got like five out of 65 that I'd don't do, but the rest of them are pretty good.

Rachel is obviously pleased about the accuracy of her 'algorithmic identity' – and she feels that it is 'pretty good' in the sense that it reflect her interests. More than this though, Rachel seems happy that this spectre of algorithmic identity simply exists:

> *Interviewer: So how do you feel about them?*
>
> Rachel: I'm so happy [laughs] that I've finally got something from them, like actually.
>
> *Interviewer: How come it makes you happy?*
>
> Rachel: I just feel really excited, I don't actually know [laughs] I think it's, for ages it didn't like do anything, and I was just really disappointed, like I expected a lot from it so I'm quite happy now, at least it knows my interests.

It is important here to consider exactly what Rachel feels she has 'got from them' – 'them' referring her to both Google *and* Google Now. Rachel has in fact got nothing more from Google *Now* in terms of correct functionality or service – all her 'Ad Settings' profile has revealed is that she has been 'noticed' and profiled by Google. Furthermore, Rachel's pleasure at finding her ad settings seems to negate the previous disappointment at Google Now's lack of functionality – yet as is clear from her previous disappointment, her Google profile has apparently not informed or enriched her experience of Google Now. As Rachel herself states, 'it's weird because like I didn't know like it [Google] knew like so many of my interests, so it's

like it's weird that it [Google Now] doesn't act on that, like it doesn't actually show me cards related to that sort of stuff'. There is a clear disconnect here between Google's tracking of Rachel's intentions and the personalised data outputs that Rachel is (supposed to be) receiving in the form of Google Now 'cards'. Yet Rachel considers Google and Google Now to be interchangeable actors, and remains happy that at the very least, Google 'knows' who she is.

Rachel's pleasure at being recognised by Google's database here can be theorised as moment in which technology facilitates a form of self-recognition.[81] As explored in Chapter Five, a number of theorists have asserted that digital media technologies have afforded new possibilities for self-constitution and performance. Focusing specifically on moments of self-recognition, Mowlabocus examines mobile phones as 'transitional objects… [that] serve as negotiating points between self and other' (2014: 1). Mowlabocus uses Lasch's work on the culture of narcissism to explore how mobiles technologies might 'secure our sense of self' (2014: 1) in 21st Century contemporary cultural frameworks that place the individual as the centre-point of reference. Mowlabocus states:

> In our phones we become consumed by recognition of ourselves through the eyes of others (tagged comments, liked posts, other forms of phatic communication) that become mediated, brought to our attention by these technologies (2014: 2).

Here then Mowlabocus refers largely to a process wherein the mediated interactions human actors engage in constitute moments of recognition. However, Rachel's pleasure in self-recognition comes not from the eyes of others *but from the reflection of the 'algorithmic identity'*

[81] For more work on self-recognition see Sartre's (1957) work on the self and consciousness in relation to ideas of freedom, or Mead's (1934) theorizations of the self as constituted through the recognition of others. For self recognition through technology, Walker's work on the 'selfie' provides a useful framework for understanding how new media technologies and emerging cultural operations (in this case the 'selfie') are used in the process of self recognition (2014).

constituted by Google.[82] The self is secured through wholly algorithmic mechanisms, which here have been configured through 'gender, age and interests'.

As explored in Chapter Two, the algorithmic identity presented to Rachel here has – despite her pleasure in being noticed – little to do with her being explicitly identified and represented as an individual by Google. That is, Andrejevic notes that commercial data aggregation is not interested in *individuality* but in general patterns of mass user behaviour – he cites a CEO of a Data analysis company, who states that '[i]f we're right 70 to 80 per cent of the time, we don't care about any single story' (2013: 56). Bolin and Andersson-Schwartz's work suggests that the individuality of Rachel's Ad profile comes instead from the data aggregated from her web trajectory being '*translated back'* (2015: 1, my emphasis) into categories that Rachel herself can recognise as applicable to her. Rachel's selfhood is only momentarily 'fixed' into representational demographics that she recognises and finds not just 'correct', but pleasing. Despite the lack of individuality present in Rachel's profile, Rachel enjoys a moment of self-recognition none-the-less. This suggests that the labour of rending algorithmic personalisation 'personal' actually lies with the *user* and not the system, as I will explore further below.

Epistemic uncertainties: the trust that Google can personalise

As I have stated throughout this chapter, participant expectations of the app's capabilities remained very high, even as the app failed to meet those expectations. Similarly, on a number of occasions (especially in the first two sessions of the study), participants seemed to expect the app to 'know' and 'anticipate' their actions – and therefore algorithmically personalise the app – to an extraordinarily high degree. For example, during Session One Heena pointed out that so

[82] It should be acknowledged here that although Rachel's self-recognition might be secured through Google Now, her feeling of the 'lack' of Google Now's recognition might be produced through social interactions with other participants in the study. Heena for example, received far more cards despite making less efforts to 'turn to face' (Gillespie, 2014: 87) Google Now, and Rachel knows this. I would argue though that though the lack of recognition may be as a result of comparisons with other participants, it is interesting that her Google Profile works to pleasurably secure her sense of self rather than create privacy concerns for example.

far, she had not used the 'weather' card because she had other means of telling the weather at her disposal:

> Heena: I don't check the weather, I just open my window and just feel how it feels outside.
>
> [Everyone laughs]
>
> *Interviewer: Why do you think Google think that's helpful [to show the weather]?*
>
> Heena: I don't know really, maybe it thinks I'm in a foreign country, because I did come from Malaysia where it's generally very hot all the time, so I think I come here and it just wants me to know that it's going to be colder in England, and for me to put a few more layers on [laughs].

This light-hearted observation fails to acknowledge that Google Now shows *all* participants the weather (as already established, even in Session One of the study) – however Heena assumes that the weather card must somehow have identified her, knows she is from Malaysia, and therefore anticipates she will be cold in England. In the same session, the 'work' feature of Google Now was subject to similar speculation – the group discussed why Google Now had inferred 'work' places for the participants, even though the participants are all students and therefore perceived themselves to not be engaged in the act of 'work'.[83] Tariq and Lisa thus discussed the reasons behind Tariq being shown a 'work' place (bearing in mind Tariq used Google Now prior to the study):

> Tariq: I do remember that even back home when I used to go to school… [Google Now] didn't say school it said work, time from home to work, distance from home to work… so it thought you were an adult.
>
> *Interviewer: Yeah so you think it should say school?*
>
> Tariq: Yeah but it never really asked for my age did it, I have a Google account, but I'm not sure if it's got my age on it.
>
> Lisa: I think you might do because they put Google and YouTube together at some point, and YouTube generally wants your age in case there's like a video that's 18 or over, so like maybe they got it from work.

[83] The fact that the participants did not feel that their studies equated to 'work' is indicative of a wider societal assumption that students do not 'work' in the same manner of paid labour. A wider critique of this assumption lies beyond the scope of this small study, yet it seems clears that Google Now is operating on the normative implication that a user will have 'work' place that they 'commute' to.

> Tariq: Yeah yeah yeah because back in the day, well a few years ago, when I was 18, I pretended I was 18 when I joined YouTube, so that's why it thinks I'm old enough to work or something.

Tariq here then assumes that Google Now thinks he goes to work because he once pretended he was 18 in order to join YouTube; and Lisa proposes Google Now has obtained this information via Google's 2006 acquisition of YouTube. Here again Tariq and Lisa are speculating that Google can 'know' and 'anticipate' Tariq, and by extension personalise his experience of the app, to an extraordinarily complex degree. To give one more example of such speculations, in Session Two Heena told the group Google Now had shown her the 'stocks' card that week, which lead to the following exchange:

> *Interviewer to Heena: Why do you think Google Now shows stocks?*
>
> Heena: I don't know.
>
> Tariq: Is your dad into investments, or your mum, like?
>
> Heena: Yeah probably, but how would [Google Now] know my dad was?
>
> Tariq: Oh wait he's not on Facebook? [As established earlier in the focus group]. Google plus maybe?
>
> Heena: My dad doesn't have an account.
>
> Tariq: Oh OK.

Here Tariq speculates that Google might know that Heena's father is 'into investments' *and* have access to Heena's Dad's Facebook or Google plus account *and* know that Heena and her Dad are related; and therefore be able to infer that Heena is interested in stocks. The speculation is dismissed by the conclusion that Heena's dad does not have Facebook or a Google account, but no other explanation is thereafter offered by any participant.

There are a two points I want to make here. The first is that in speculating about the apps predictive and personalising capabilities in this manner, participants display an uncertainty about what data Google is mining from them across platforms (including non-Google affiliated

platforms such as Facebook), when and how. To return to the epistemic uncertainties that data tracking created for Ghostery participants in Chapter Four, I would argue that a similar epistemic uncertainty is at work in these speculations – but instead of emerging as an *anxiety* in regards to how users are known and anticipated, participants here display a sense of *trust* in Google to 'know' them, anticipate them and personalise for them. The 'epistemic asymmetry' (Brunton and Nissenbaum, 2011) between data provider and data controller in this sense generates not concern that data tracking poses a threat to their privacy – and by extension their sense of self – but instead a speculative faith that Google Now is capable of knowing their selves and personalising their experience to a complex and extensive degree.

The second point is that they assume that the app is personalised to this high degree *even as the app gets these apparent predictions wrong* – Heena reported that she has no interest in stocks, and so Google Now has failed again to meet the participants expectations. Despite these failings, like Rachel the participants find personal relevance in Google's computational architecture, even as it fails to personalise. As explained in Part One, scholars such as Hillis, Petit and Jarrett have noted Google's discursive framing as a kind of 'divine mind' (2013) – a mind that here is framed as something that can know and anticipate users interests in all their complexities. To return to Mowlabocus' (2014) work on self-recognition, it appears that the participants are reading self-recognition into the app – they are finding something 'personal' in the apps inferences despite the fact it is not anticipating them accurately. This kind of reading is not new – Adorno's work on astrology identifies a similar process of reading individual poignancy into texts that are in fact universally standardised and consumed (1994). However in this instance it is not just an adherence to ideologies of individualism that create such faith, it is data capture mechanisms at work in Google that are material operations but are not fully known by these participants. This epistemic trust in Google Now can be considered again from an ontological perspective – that is, participants' sense of self is not threatened by data tracking as with Ghostery participants, but is instead *secured* in the speculations that Google 'knows' these

participants' preferences, identities and even their parents.

Personalisation vs 'the ideal user': Google Now's normative framework

At this point I would like to propose a more straightforward explanation to Google Now's predictive power: 'stocks' is simply one of twenty drop-down categories of lifestyle and personal interest preference upon which the app's structural architecture is predicated. As a scholars such as Nakamura (2002), Oudoorshen et al. (2004) and Grosser (2014) have noted, the reliance on pre-defined, finite categories of lifestyle choice, interest preference and identity expression – such as the 'stocks', 'sports', 'flights', 'movies', 'weather' etc. upon which Google Now is built – have implications regarding 'how data structures and computational power lead to certain kinds of interfaces or modes of presentation' (Grosser, 2014: np).

These scholars propose that the predefined architectural and ideological frameworks that structure technologies can lead to the presentation of standardising, homogenising and reductive ideals of lifestyle choice and self-expression, wherein the 'default user' is normatively assumed, configured and maintained to be white, male, heterosexual and middle class (Oudshoorn et al, 2004). If we take Google Now's twenty lifestyle categories – which are used to frame and deliver the information that a user '*needs* throughout their day' – as an example, it becomes apparent that Google Now is using a 'limited choice interface model' (Grosser, 2014: np) to construct and infer the lived trajectory of its assumed 'ideal user' (Oudshoorn et al, 2004). For example, the 'sports' category is built on a set of structural protocols that *only* allow users to receive updates about the pre-registered, exclusively male sports team saved in Google Now database, thus excluding the interests of users who might want updates regarding female football teams. Even those categories that do not rely on pre-defined databanks of information, such as 'stocks', construct an 'ideal user' in that they assume that 'stocks' updates are of relevance to the lives of all individuals; despite that fact that stocks updates would most likely be 'relevant' to only a small, affluent and wealthy subset of Google Now's one billion potential

worldwide users. Thus, Google Now's choice to show Heena stocks is far more likely to be predicated on Google's normative assumption that stocks information is 'relevant' to the daily lived trajectories of its 'ideal user', rather than the fact that Heena's dad is into investments.

The negotiations here between Google Now and these users reveal the app's operation via a homogenous, apersonal framework, by offering cards that *appear* personalised but yet adhere to a highly normative framework. However, Lisa, Tariq and Heena's speculations do not entertain that the idea that Google Now is simply *not personal enough* – in fact they put down Google Now's failures to provide 'relevant' information to quite the opposite problem; Google Now *does* know them personally (it knows Heena's parents are into stocks; it knows she is Malaysian and used to hot weather; it thinks Tariq is a 'worker' because he lied about his age – on his YouTube account), but has anticipated their preferences incorrectly. The assumption here then is that Google Now fails *because* it is personalised, not because it isn't.

All participants said that they had 'no interest' in stocks – and though Tariq, Heena and Lisa speculated that Google Now's choice to display 'stocks' might be due to complex personalisation processes, Laura and Giovanni (who were interviewed separately) answered differently. For example when I asked Giovanni why the app shows him stocks even though (as reported) he has no interest in them, he answered:

> Because I think that… this is a product made to be suitable for everyone, so maybe I could be a business person, a businessman… or a normal person through Google Now.

For Giovanni then, Google Now is for 'everyone', for a 'normal person' – an identity category which is tellingly also conflated with being a 'businessman' (a conflation also made by Google Now itself). I also asked Laura 'why do you think Google Now… has options for things like Sport and Stocks?' to which she replied 'probably just to support everyone's interests'.

Unlike Heena, Lisa and Tariq, Giovanni and Laura do recognise that the display of categories such as 'sports' and 'stocks' can be explained by Google Now's imperative to provide information deemed 'universal' or 'normal' in everyday life. However, far from questioning this framework, Giovanni and Laura place *their* use of Google Now *outside* the boundaries of the 'normal' usage expected of Google Now users. In showing this unhelpful information, the disconnect between Google Now's assumed trajectory of everyday experience and these participant's lived experiences is revealed. Differently put, Google Now fails because its normative framework is too far removed from these students' lived experience (who do not 'work', who do not 'commute', who are not into 'stocks', who have other ways to check the weather). Yet tellingly this disconnect is explained not by recognition of Google's normative framework, but instead through participants' acceptance that their lived experience must exist outside 'the norm'.

As Gillespie notes, computational categories – such as the twenty categories of lived experiences upon which Google Now's inference system is structured – work to impose a powerful form of politics on the users exposed to and constructed by these categories. He writes:

> Categorization is a powerful semantic and political invention: what the categories are, what belongs in a category, and who decide how to implement these categories in practice, are all powerful assertions about how things are and are supposed to be (2014: 198).

Google Now's picture of 'how things are and are supposed to be' thus constructs its users as stock market followers, jet-setters, workers, male sports team fans and consumers, a picture of life that these participants did not recognise as relevant to their own experience. Yet, instead of questioning the apersonal nature of this apparently 'personalised' system, participants (such as Tariq, Heena, Lisa) put Google Now's flaws down to complex systems of personalisation that lead to false inferences, or others (such as Giovanni and Laura) positioned themselves as outside the 'everyone' for which Google Now supposedly works.

Participants as media studies scholars: legitimising trust in Google

In this section I want to devote some time to participants' status as developing media studies scholars. As mentioned in the introduction, as part of their module participants actually studied the socio-political implications of data tracking and personalisation in the week leading up to the last session of the study. This begged the question: how did their critical introduction to personalisation intersect with their high expectations of the app?

Session Four of the study was largely designed to respond to any critical developments participants may have made. As part of their study that week, students had learned about data tracking as a potential invasion of privacy, as well as Pariser's (2011) argument that algorithmic personalisation might create a restrictive, invisible 'filter bubble' of consumption (as outlined in Chapter Two). I asked students how they felt about this critique. Tariq told me:

> Personalising your internet experience is pretty bad because you're really just validing [sic] your own opinions, which is like, you don't really want to do that, you want to be exposed to a diversity of opinions.

Tariq here then accepts Pariser's critique, and Rachel, Lisa and Heena also displayed awareness of this argument. Yet Lisa, Rachel and Heena agreed that though the effects of algorithmic personalisation can be detrimental, for the most part viewing personalised content did not negatively affect their own experience of the web. For example Rachel explained:

> If I wasn't so interested in world events and stuff, and then I wouldn't get like maybe world events on the top of my thing [search results] um so some people aren't going to be as educated about that sort of stuff and I think that's quite important. But because I am, like it's not really a problem for me, I feel like I get all the stuff that I need.

Rachel seems confident that viewing personalised content is 'not really a problem' for her because she feels she gets 'all the stuff' she needs. If we take into account Pariser's assertions that we need to be aware of the 'things we didn't know we didn't know' (2011a: np) however, Rachel's point becomes slightly problematic; in his theoretical critique, the personalised

webscape prevents us from exposure to information that we cannot know exists (Pariser, 2011), and therefore Rachel's confidence in her own informational abilities is somewhat misplaced. Similarly, as mentioned as part of the data-for-services exchange discussed earlier, Laura displayed a critical awareness that Google Now might 'manipulate' her, but she legitimised her acceptance of this through an individualistic rationalisation that she is aware of such manipulations. In these responses then, students' critical engagements with personalisation are weighed up as applicable to other people, *but not to them.* Thus, their negotiations with Google as a trustworthy socio-technical force are legitimised through a kind of critical distance between 'other people' and participants' themselves.

Conversely however, in Session Four Giovanni told me that the module has made him 'more aware' of privacy issues, and suggested that the only way in which he was going to use the app was as a form of resistance *against* Google's data tracking strategies:

> *Interviewer: Do you think you're going to continue using Google Now?*
>
> Giovanni: Er I don't know, I mean I think I'm going to use it randomly, like when I have to search for something on Google, just to for piece of mind to check what Google Now is saying.
>
> *Interviewer: When you say for piece of mind, what do you mean?*
>
> Giovanni: To check that Google Now hasn't taken too much personal stuff.

This resistant use exemplifies Gillespie's statement that **'**[w]hile it is crucial to consider the ways algorithmic tools shape our encounters with information, we should not imply that users are under the sway of these tools. The reality is more complicated and more intimate' (2014: 186). However, it seems important to acknowledge that throughout the study, Giovanni's trust in Google was muted; therefore his critical development largely remained consistent with his engagement with Google Now. For the other participants however, though they were aware of the potential detrimental effects of algorithmic personalisation, algorithmically personalised information was to be embraced as convenient and largely beneficial to these individuals, even if there were wider concerns for more universal use.

Conclusion: 'I'll use Google, just because it's there now'

In the final session, as well as discussing critiques of algorithmic personalisation I asked participants to sum up their experiences of Google Now. For almost all the participants it transpired that the app had in general failed to live up to their expectations. For example, when I asked participants 'how would you describe your experience of Google Now?', Lisa stated '[Google Now] promises a lot, and it sort of didn't really help me in any way… its not as impressive as I thought it would have been', though later in the session she invoked an element of self-blame, stating 'I mean I'm not sure if that's my fault for not giving it enough information.' Similarly, Rachel replied to the same question:

> I'd just say it was disappointing… I just, I think I expected a lot from it, like from - what's its slogan? Like giving you the information you need before you even ask for it, well that's what I expected… by I barely got any information on it when I asked, so [shrugs].

To conclude then I want to reconsider to one of the questions asked in the introduction of this chapter: are these users' lived experience informed, altered and even constructed by the pre-emptive inference experiences that Google Now attempts to map on to user's lived trajectory?

In one sense the answer is 'no': these users' experiences did not seem to be informed, altered or constructed by Google Now's predictive powers – after all, the participants repeatedly reported that they were disappointed by the app's functions, and did not seem to be able to find a use for them. Taking Jarrett's theory that Google's inferences can autonomously act on the identities of those it seeks to reflect (2014), it seems here that Google Now's very disfunctionality has rendered the app's autonomous powers somewhat redundant: Google Now is not acting on, constructing or altering the lived experiences of these participants, because it has failed to anticipate their intentions and daily trajectories. In some ways then, failure to find a 'use' for Google Now, coupled with the disconnect between Google Now's 'ideal user' and their own lived experiences, seems to have formed a kind of unintentional

resistance to Google's attempt to create an appropriative and performative database of 'intention'. To put it more crudely, these participants are not 'under the sway' (Gillespie, 2014: 184) of the app's predictive powers because the gap between the 'anticipated user' and the 'user themselves' (Gillespie, 2014) is simply too great.

I do not mean to suggest that is this gap was closed – if Google *did* manage to align its predictions with the lifestyle trajectories of these users – then these students' lived trajectories would be necessarily constituted or conditioned by Google Now. There are many ways that users resist, appropriate or 'make do' with technologies as the work of Kennedy (2015) and Best and Tozer (2012) highlight; however, given that the students could not find a use for the app, I do not feel I am able to critique how these participants' usage could be read as regulatory or resistant. Nor do I mean that if Google Now's inferences did 'work properly' then they would be discounted from critical interrogation – as Hall (1989), Jarrett (2014a) and Deleuze (1992) and other media and cultural theorists stress, the structural mechanisms of neoliberal capitalism mean that even as these structures may afford benefits, they can still work to regulate and discipline the subject. However, the gap between users' lived experiences and Google's ideal of what life should look like that was so wide that I am not inclined to make claims regarding how the app's functions regulated or constructed these participants' lives.

What I do propose though is that even as this disconnect between 'ideal user' and these participants lived trajectories arose time and time again, the participants were happy to place their trust Google Now predictive and personalising *promises*. This trust was not based on Google Now's functionality, wherein the structural framework of Google Now imposed a kind of regulatory adherence to the norms embedded in the app's framework. Instead, this trust emerges from participants' adherence to discursive ideologies that are implicit in Google's contemporary drives to personalise user experience. Differently put, participants assumed that the app must be convenient, that is must know them and that is must be able to personalise for

them, even as it failed to function in this manner. In fact, participants seem to work hard to find something personal in Google Now's normative framework – from Rachel's pleasure at recognition, to Heena, Lisa and Tariq's assumption that the app is capable of knowing who their parents are, their age and their nationality. It is therefore the *possibilities of personalisation,* and not its tangible functional outputs or uses, upon which participants' trust in Google Now was built.

This embrace was exemplified in Rachel's concluding remarks of her engagement with Google Now. Though Rachel described her experience of Google Now as disappointing, she later implied that the app's very existence was enough to reorient her practices to incorporate its functions, as evidenced in the following exchange:

> Rachel: I'll probably still use [Google Now], if I like need to find somewhere in Brighton, I can always like use it to find stuff, so I probably still will.
>
> Lisa: But you can just use normal safari for that can't you?
>
> Rachel: Yes, you can [laughs]. But I'll use Google, *just because it's there now.*

Remember, Rachel was the participant who was most consistently disappointed in the app, but who enjoyed the moment of self-recognition that Google Ad Settings awarded her. In her attempt to find a place in her lived trajectory for Google Now, Rachel's statement highlights Google's power as a monolithic force – its ubiquitous and naturalised status in individual lives, combined with the fact that Google can add services like Google Now to users' devices free of charge, means that Google no longer needs to 'work' in order to create the opportunity to attract and keep users. As discussed, participants found a way to 'make personal' Google Now's apersonal operations, even as they failed. Google's predictive promise becomes the reason in and of itself to trust in Google – as Rachel says, she'll use the app, 'just because it's there now'.

Chapter Seven

Conclusion: removing 'the personal' from personalisation

To conclude this thesis I would like to return first to the research questions proposed in the introductory chapter. I do so not only to address some of the ways that they have been answered but to also re-evaluate the questions themselves in a retrospective sense – by reconsidering them through the research that they have produced. By re-evaluating these questions it becomes possible to reflect on the core interventions of this thesis and also consider new questions that might emerge as a foundation for future research.

The questions were: What 'horizons of possibility' (Gerlitz and Helmond, 2013) does algorithmic personalisation – as a market-driven practice designed to anticipate the user – create for users, who are at once bound up in, and are the subject of, its operations (RQ1)? How do users who encounter algorithmic personalisation practices understand, engage with and negotiate those practices (RQ2)? And how can the negotiations and engagements created between algorithmic personalisation practices and those who encounter such practices be critically scrutinised (RQ3)?

It is the second and third questions that I would like to focus on first and foremost, as it is through exploring the engagements, understandings and negotiations of users who are bound up in algorithmic personalisation that this thesis has made its central critical interventions. I have argued that users find their horizons structured partly through the algorithmic operations, discursive frameworks and socio-technical constraints inherent in algorithmic personalisation practices, but also that users' experiences and negotiations themselves help to constitute these horizons. The co-constitutional relationships created between user and system by algorithmic

personalisation mean that these horizons must be considered in this way in order to critically interrogate the implications that emerge from algorithmic personalisation at the level of lived experience.

Thus I see as one of my central interventions into research on algorithmic personalisation an insistence on the need to critically interrogate *through* users' lived experiences as anticipated subjects the ways in which they bound up in, and are subject to, algorithmic personalisation. I have argued that this emphasis on lived experience provides new methodological and critical possibilities for scrutinising algorithmic personalisation. Specifically I developed fresh understandings in regards to how users protect their autonomy, navigate the data-for-service exchange, understand the forms of knowledge that data tracking produces, constitute their sense of self, perform their identity and classify others bound up in algorithmic personalisation practices.

This focus on user experience has in particular enabled me to make a strong case to assert one of my starting arguments: that privacy – the invasion of it or the protection of it – is not the only issue to be critically considered in terms of contemporary commercial data tracking. By considering users' accounts of platforms' attempts to anticipate them, new avenues of investigation emerge that consider not only if data tracking is invasive to the self, but *what kind of self* is constituted and reframed through systems of anticipation.

This thesis has argued that these formations of self are constituted in relation to the epistemic uncertainties that algorithmic personalisation creates for the users who are anticipated by commercial systems. I have argued that the slippery, complex, cross-platform and dividuating nature of algorithmic personalisation means that users cannot know in any certain way what data is being tracked and used by platform providers, what 'experiences' are being personalised, and crucially, how their identities are being not only anticipated but also constituted. I have

pursued this connection partly by identifying the uncertainties that emerge in context-specific ways; for Ghostery users interviewed, epistemic uncertainties emerge as anxiety that these users can never 'know' the extent and reach of their data trails, and therefore never completely protect themselves from the threat of data tracking. And yet, for Google Now participants the epistemic uncertainties created by algorithmic personalisation emerge as trust – these participants again did not know exactly how they were being tracked, anticipated and personalised, yet displayed a deep faith in Google not only to protect their data but to anticipate them and personalise their experiences to extraordinary degrees.

These reported uncertainties in some ways have triggered a re-evaluation of my questioning of how users 'understand' algorithmic personalisation. I stated in the introduction that algorithmic personalisation is 'slippery' – it is both there and not there, is 'felt' by users and legitimised by platforms but not pinned down. It has become increasingly clear to me that this thesis has explored not only how users *understand* algorithmic personalisation, but how users 'cope' with the fact that as data providers, we do not and perhaps cannot fully understand all the ways and means in which platforms seek to anticipate and act on our movements, interactions and through this, intervene in our sense of and performance of our identities.

I do not mean to suggest that in 'coping' with algorithmic personalisation that its effects are some how only 'felt' or 'imagined' by those that encounter it. Quite the contrary: the operations of personalisation are tangible and material – it is just that for those web users who encounter such practices, these practices remain elusive but effective. I mean 'effective' not in the sense that they 'work' (for some participants in this thesis, algorithmic personalisation did not 'work' for them) – but in the sense that they have tangible effects on everyday experiences with online and web technologies. The computational operations deployed to make personalisation possible may be slippery to those subjected to them – but they continue to tangibly intervene in user experiences and everyday trajectories nonetheless.

I have argued that in creating epistemic uncertainty, the slipperiness of algorithmic personalisation emerges also as an ontological consideration: algorithmic personalisation has critical implications for identity itself. As I have argued, algorithmic personalisation practices do not just seek to know and anticipate web users; they seek to act on them. The actions that algorithmic personalisation practices make in the name of 'convenience' and automated decision-making for the user are in fact recursive and co-constitutional of the very actions they seek to aid. As such users become 'entangled' (Barad, 2007) with and with(in) the algorithmic personalisation practices they encounter.

By exploring this, I have argued algorithmic personalisation raises critical implications for the performative production of users' selfhoods in ways that intersect with utterances of identity and with users' sense of autonomy. The capacity of algorithmic personalisation not just to act *for* users but *on* them is sometimes welcome, but also often, and particularly in the cases I have chosen to explore, creates a struggle for autonomy between user and system – wherein the decision-making capacity of the algorithm becomes a site of struggle in regards to the actions it takes in the user's stead. In acting on behalf of the user, algorithmic personalisation practices intervene in the performative process of identity constitution, of making oneself (visible) to other users bound up in personalisation, and in making oneself 'known' to the system. This has emerged throughout this thesis: but here I'd remind readers of Chapter Five especially, wherein autoposting apps sought to actively constitute users' selfhoods, and also Chapter Six where Google Now users worked hard to find self-recognition in the system, and to be 'known' as a person by the algorithmic personalisation practices they encountered. Such instances highlight that the entanglement of self and system is experienced in ambiguous ways for web users; algorithmic personalisation *disruptively reworked* users' performative self-constitutions on Facebook and yet *legitimised* the self through Google Now.

It has emerged through this research that algorithmic personalisation incorporates and facilitates at times complex disciplinary regimes into users' everyday actions and interactions. An example of the latter, discussed in the body of the thesis, is the act of listening to music via the 'like' economy, wherein the market drive to anticipate the users worked to restrict and regulate how users classify and constitute their own performative utterances of identity. Furthermore, the market drive to personalise user experience by acting in their stead also intervened in how users classify *others'* identity performances; as 'chavvy', as legitimate, as playful, as commodified.

These investigations have partly highlighted that identity is (always-already) collectively informed and socially legitimised. However, my research has also uncovered new forms of algorithmic mediation between users' sense of self as unitary, private and interior but also as multiple, context specific and recursively reworkable. My research has found that it is users, as well as service providers, that at times frame the self as inner and unitary. This formation came to the fore especially in my discussions with Ghostery users, many of whom felt that the self was an interior entity that should be protected from the dehumanising threat of data tracking. Therefore, even as algorithmic personalisation intervenes in how the self is performatively produced – and is in this sense understood as a performance of a non-essential self – it also frames and maintains the self as a unitary, inner and private entity.

As I have argued throughout this thesis, it is through considering the lived experiences of users that such contradictions and complexities of identity can be interrogated. To achieve this I have sought to pin down and bring together critical theorisations of personalisation, and to interrogate the slipperiness of personalisation at the level of everyday life – put together these enabled me to distinguish algorithmic personalisation as a practice distinctive from other forms of 'personalised' media. It has also allowed me to approach personalisation in ways that depart from existing theorisations. For example I have explored the effects of algorithmic

personalisation not in regards to how it might structure and restrict a user's (online) world – as with Pariser's 'filter bubble' critique (2011), but how, conversely, the user themselves is brought to the world.

Directions for future research

This thesis has stressed at various points that despite the fact platforms use the idea of a 'personalised experience' to legitimise the tracking and anticipation of users, algorithmic personalisation is not about 'making it personal' for users – the processes that supposedly seek to 'know' users are in fact there to constitute web users as commodifiable 'dividuals'. One of the distinctive modes of operation of the forms of anticipation I have dealt with, and one of the areas where the ambiguity of selfhoods demanded by personalisation is developing, is in emerging forms of *predictive identification*. In Chapter Six especially, Google Now' predictive powers failed to personally know users and personalise their lived experiences accordingly, and yet participants worked hard to find 'personal relevance' in Google Now's normative lifestyle frameworks. Such negotiations suggest to me that the 'personalisation' supposedly enacted by the system is in fact at times enacted by the user – it is individuals themselves that find a way to 'make personal' the apersonal, everyday interventions created by algorithmic personalisation practices.

Here then I would like to offer a re-evaluation of the research question of how to critically scrutinise user negotiations with algorithmic personalisation. I would argue that to label the entities created from algorithmic personalisation 'algorithmic identities' (Gillespie, 2014) is in some ways to give these anticipation systems 'too much credit' – there is not a holistic 'algorithmic identity' that exists in some back-end system, attempting to reflect the 'user themselves'. There are only abstract, fragmented, recursive correlations between the users as nodes in a network. However, the research in this thesis highlights that this in no way means these fragmented abstractions do not have implications for the identities of the users they

dividuate: they absolutely make complex, potentially profound, performative and material socio-cultural interventions into the every lives, articulations and interactions of the individuals they anticipate. This thesis has sought to highlight the significance of the interventions of algorithmic personalisation in the everyday lives of individual users, even as it dividuates.

One of the directions for future research that might emerge from this research is to attempt to get at the mechanics of these developing, dividuating back-end predictions, and using such mechanics to map individuals' lived trajectories on to such dividuations. This would mean trying to track not the 'doing subject' as Ruppert, Savage and Law call it (2013), but the 'doing configurations' that effect not only what users see when they go and online, but also how they perceive their sense of self. Such a task would require a methodology capable of combining big data analysis *with* the lived experiences of individual users, and recognising their context-specific identity configurations alongside their inputs into the correlational, abstract network that Bolin and Andersson-Swartz (2015) describe. The marrying of 'big data' with 'small data' is becoming increasingly used as a methodology (as acknowledged in Chapter Three), and I believe research on algorithmic personalisation would strongly benefit from such a combination.

Algorithmic personalisation practices, like many web-based technologies and operations, are likely to become more developed as web users adapt their interactions to embrace or reject the data-for-service exchange so common on the web, and as data tracking becomes increasingly ubiquitous and advanced (Peacock, 2014). It is telling, for instance, that developments in personalisation also include discursive erasure of the term itself. For example, Google no longer employ the term 'Personalized Search' (Google Blog, 2009) to describe the tailoring of search results based on individual 'relevance'. This is certainly not because Search is becoming once again more 'universal' and 'objective' as it was when it was first launched (Van Couvering, 2007) – as Google's latest information video makes explicit, Google's 'goal' is still to 'create a

seamless connection between [a user's] thoughts and their information needs and the results they find' (Google, 2016). The desire to anticipate the individual in the name of convenience (and of course commerce, as the video suggests though does not make this explicit) still persists, but the term 'Personalized' does not feature in any of Google's current information materials.

To me this suggests not that personalisation is disappearing, but that the notion that platforms should track us, anticipate us and *act* on us is becoming ever-more ubiquitous and naturalised: what was once 'Personalised Search' is now simply 'Search'. There is therefore pressing need to continue to critically consider the *ways* in which users negotiate, understand and are entangled with(in) such practices if we are to understand what such naturalised anticipation systems do to the users they anticipate. For those web users who currently encounter algorithmic personalisation as part of their current lived experiences and trajectories, the drive to personalise demands negotiations for autonomy, identity and epistemic knowledge production. Such negotiations will continue to create new avenues for critically exploring how algorithmic personalisation intervenes in users' everyday interactions, socio-technical negotiations and formations of personhood.

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Appendix

A: List of interviewees

1. Interviews for Ghostery study:

Participant information	Interview date	Format
Katherine, Managing Director, Netherlands	25/09/2013	Face-to-face (audio recorded)
Edward, occupation undisclosed, France	26/09/2013	Email
Christopher, Snr. Systems Engineer, US	05/10/2013	Email
Gyrogearsloose, unemployed, Canada	30/10/2013	Skype (audio recorded)
Participant, undisclosed, undisclosed	10/11/2013	Email
Mary, web developer, US	09/11/2013	Skype (audio recorded)
Hellokitty, unemployed, UK	12/11/2013	Face-to-face (audio recorded) *Note: interviewed with Yoda, HelloKitty's partner*
Yoda, IT user support officer, UK	12/11/2013	Face-to-face (audio recorded) *Note: interviewed with HelloKitty, Yoda's partner*
Robkifi, researcher, UK	14/11/2013	Face-to-face (audio recorded)
Claire, postgraduate student, UK	15/11/2013	Face-to-face (audio recorded)
Chris, unemployed/ activist/ digital miner up the North-West Passage, UK	13/12/2013	Face-to-face (audio recorded)
Lisa, activist, UK	12/12/2013	Face-to-face (audio recorded)

2. List of interviews for Facebook autoposting apps study:

Participant information	Interview date	Format
Calum, duty manager, 30, UK	11/ 03/ 14	Face-to-face (audio recorded)
Melanie, civil servant, 29	17/03/14	Face-to-face (audio recorded)
Sam, digital communications manager, 29	30/04/14	Face-to-face (audio recorded)
Marc, postgraduate student, 24	20/05/14	Face-to-face (audio recorded)
Beth, primary school teacher, 28	19/05/14	Face-to-face (audio recorded)
Sara, customer service manager, 30	30/06/14	Face-to-face (audio recorded)
Focus group one	13/05/14	Face-to-face (audio recorded)
Alice, researcher, 28		
Daniel, graphic designer, 29		
Rory, sales manager, 30		
Kevin, accounts executive, 25		
Focus group two	05/06/14	Face-to-face (audio recorded)
Sophie, publishing assistant, 28		
Rebecca, lecturer in EAP, 27		
Terry, graphic designer/ carer, 28		
Steve, trainee surveyor, 29		
Audrey, marketer, 29		
TP, producer, 29		

3. List of interviews and study timeline: Google Now Study

Table 1. Participant interview set-up	
Focus Group participants	Tariq, 18, Dubai; Rosie, 18 UK; Heena, 18 Malaysia; Lisa, 18, UK
One-on-one interview 1 participant	Giovanni, 18, UK
One-on-one interview 2 participant	Laura, 18, UK

Table 2. Study timeline	
01/09/14	Participants recruited to study and asked to activate Google Now and email screenshots
8/10/14	**Interview/ focus group Session One**: Introductory questions/ discussion
15/10/14	**Interview/ focus group Sessions Two:** Google Now questions, diary-writing exercise
22/10/14	**Interview/ focus group Session Three:** Google Now questions, Google Ad Settings exercise, experiment with Tariq
29/10/14	No interview session – students on Reading Week
5/11/14	**Interview/ focus group Sessions Four:** Last session of study (note: students attended lecture on privacy/ personalisation the morning before last sessions took place)

B. Consent forms and information sheets

1. Consent and information sheet for Ghostery project participants

University of Sussex

CONSENT FORM FOR PROJECT PARTICIPANTS

Thesis Project Title: *Problematising personalisation: interrogating the relationships between end users and online personalised media*

Case Study Title: *Ghostery and tracker blocking: How do users understand and negotiate practices of personal data tracking?*

Project Approval Reference: ER/TK44/1 (Project approved 17/07/13)

I agree to take part in the University of Sussex research project named above. I have had the project explained to me and I have read and understood the information sheet, which I may keep for my records.

I understand that agreeing to take part in an interview means that I am willing to:

To discuss my opinions about Ghostery, tracker blocking, online personal privacy, data collection and personalisation

Allow the interview to be recorded.

I also understand the following:

- I understand that any information I provide is confidential, and that no information that I disclose will lead to the identification of any individual in the reports on the project, either by the researcher or any other party.
- I understand that if applicable I will be given a transcript of the interview, which I will be invited to comment on should I wish to.
- I understand that my participation is voluntary, that I can choose not to participate in the project, and that I can withdraw at any stage of the project prior to publication without being penalised or disadvantaged in any way.

I consent to the processing of my personal information for the purposes of this research study. I understand that such information will be treated as strictly confidential and handled in accordance with the Data Protection Act 1998.

Signature:_____

Name:_____

Date:_____

Information sheet

Project title: Problematising personalisation: interrogating the relationships between end users and online personalised media

Case study: Ghostery users, data tracking and personalisation

Thank you very much for considering to take part in this study. Before deciding whether or not to participate, it is important to understand why this study is being conducted and what it will involve. Please take time to read the following information carefully.

What is the aim of the study?
The aim of this study is to explore how Ghostery users feel about data tracking and tracker blocking, as well as how they think these topics relate to online privacy and personalised media (such as targeted advertising).

By undertaking semi-structured interviews, this study focuses on how Ghostery users like you feel about their experiences of data tracking in online environments, and how they engage with the technologies that use tracking blocking, behavioural profiling and targeted advertising as part of their everyday operations. It also explores how users feel about the privacy issues that arise from the use of data tracking on online platforms. Finally, the interview will explore how you feel these privacy issues might connect to personalised media.

What does participation in the study involve?
If you decide you would like to participate in this study, you will be asked to take part in an interview, either via email, phone, Skype or in person – whatever suits you best. The interviews will be semi-structured to allow you to express your feelings about the topics raised as fully as possible, but will probably take around 30 minutes to an hour to complete. Face-to-face interviews may take a little longer, depending on the time you are willing to allow for questions. Email interviews may be followed up with further questions specific to your original interview, if you are willing to respond to them. Live interviews will be recorded but will be anonymous. After the live interview, you will have the option to read the transcript of our conversations.

Taking part in this study is entirely optional. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time prior to publication and without giving a reason.

Why I have I been chosen to take part?
Because you are a Ghostery user and you are over 18 years old.

What are the possible disadvantages of participating?
You will need to commit approximately 30 minutes to 1 hour of your time in order to take part.

What are the possible advantages of participating?
All interviews are designed to be flexible and fun, to allow you to feel comfortable and to answer questions in a way that reflects how you feel about the topics – there are no right or wrong answers, it is your opinion that is valuable! The overall aim of the study is to explore how platform users feel about privacy issues, personalised media and tracker blocking, so your interview answers will contribute to important academic research into how platform users engaged with online personalisation in everyday contexts – an area of study that has so-far been little explored by Media and Cultural Studies.

Will my information in this study be kept confidential?
All identifying information gathered in this study will be kept strictly confidential. The finalised thesis will use a pseudonym of your first name, which can be self-selected or chosen on your behalf, in order to protect your identity. Your name and contact details will be stored separately to the transcripts of the interviews and your name will not be used in the transcriptions and subsequent writings.

How will the results of the study be used?
The results of the study will be used as part of my research for a PhD thesis in Media and Cultural Studies.

Who is organising and funding the research?
I am conducting this research as a doctoral researcher at the University of Sussex in the School of Media, Film and Music. I am currently funded by the Arts and Humanities Research Council (AHRC).

Contact for further information

Tanya Kant – tk44@sussex.ac.uk

For more information on the project please visit:
http://www.sussex.ac.uk/mediaandfilm/people/list/person/174167

Or the research project blog: http://problematisingpersonalization.wordpress.com/

Thank you for taking the time to read this information sheet and for your interest in this study.

2. <u>Consent form and information sheet for Facebook 'Plugged-in Profiles' research project</u>

University of Sussex

CONSENT FORM FOR PROJECT PARTICIPANTS

Thesis Project Title: *Problematising personalisation: interrogating the relationships between end users and online personalised media*

Case Study Title: *Plugged-in profiles: How do Facebook users understand and negotiate the external services connected to their Facebook accounts?*

Project Approval Reference: ER/TK44/1 (Project approved 17/07/13)

I agree to take part in the University of Sussex research project named above. I have had the project explained to me and I have read and understood the information sheet, which I may keep for my records. I confirm that I am 18 years old or over.

I understand that agreeing to take part in an interview means that I am willing to:

To discuss my opinions about Facebook, services that connect to your Facebook profile, identity management and personalisation.

Allow the interview to be recorded (applicable to live interviews only).

I also understand the following:

- I understand that any information I provide is confidential, and that no information that I disclose will lead to the identification of any individual in the reports on the project, either by the researcher or any other party.
- I understand that if applicable I will be given a transcript of the interview, which I will be invited to comment on should I wish to.
- I understand that my participation is voluntary, that I can choose not to participate in the project, and that I can withdraw at any stage of the project prior to publication without being penalised or disadvantaged in any way.

I consent to the processing of my personal information for the purposes of this research study. I understand that such information will be treated as strictly confidential and handled in accordance with the Data Protection Act 1998.

Signature:_____

Name:_____

Date:_____

Information sheet

Project title: Problematising personalisation - interrogating the relationships between end users and online personalised media

Case study: *Plugged-in profiles: How do Facebook users understand and negotiate the external services connected to their Facebook accounts?*

Thank you very much for considering to take part in this study. Before deciding whether or not to participate, it is important to understand why this study is being conducted and what it will involve. Please take time to read the following information carefully.

What is the aim of the study?
The aim of this study is to explore how Facebook users feel about the entertainment services that connect to their Facebook profiles (such as Spotify, Neflix, Instagram or Candy Crush Saga), as well as how these connections relate to ideas of identity management, personal taste, control and choice.

By asking semi-structured questions – either online or in person - this study focuses on how Facebook users like you feel about their experiences of services that automatically or manually connect to their Facebook profiles. Questions are designed to explore the ways in which entertainment services have connected to your Facebook profile, if these connections were involuntary or voluntary, and if these connections were public, semi-public or private. Furthermore, the questions seek to unearth the consequences of the connection between entertainment services and your Facebook profile – do these connections affect your online identity? Do you feel you have a choice in how these connections relate to your Facebook profile? Have these services ever tried to 'write' something on Facebook on your behalf? The project hopes to examine these questions, and others like them.

What does participation in the study involve?
If you decide you would like to participate in this study, you will be asked to take part in an interview, either via email, phone, Skype or in person – whatever suits you best. The interviews will be semi-structured to allow you to express your feelings about the topics raised as fully as possible, but will probably take around 30 minutes to an hour to complete. Face-to-face interviews may take a little longer, depending on the time you are willing to allow for questions. Email interviews may be followed up with further questions specific to your original interview, if you are willing to respond to them. Live interviews will be recorded but will be anonymous. After the live interview, you will have the option to read the transcript of our conversations.

Taking part in this study is entirely optional. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time prior to publication and without giving a reason.

Why I have I been chosen to take part?
Because you are a Facebook user, your Facebook account is connected to one or more entertainment services, and you are over 18 years old.

What are the possible disadvantages of participating?

You will need to commit approximately 30 minutes to an hour of your time in order to take part.

What are the possible advantages of participating?
All interviews are designed to be flexible and fun, to allow you to feel comfortable and to answer questions in a way that reflects how you feel about the topics – there are no right or wrong answers, it is your opinion that is valuable! The overall aim of the study is to explore how platform users feel about automated personalisation, personalised media and online identity, so your interview answers will contribute to important academic research into how platform users engaged with online personalisation in everyday contexts – an area of study that has so-far been little explored by Media and Cultural Studies.

Will my information in this study be kept confidential?
All identifying information gathered in this study will be kept strictly confidential. The finalised thesis will use a pseudonym of your first name, which can be self-selected or chosen on your behalf, in order to protect your identity. Your name and contact details will be stored separately to the transcripts of the interviews and your name will not be used in the transcriptions and subsequent writings.

How will the results of the study be used?
The results of the study will be used as part of my research for a PhD thesis in Media and Cultural Studies.

Who is organising and funding the research?
I am conducting this research as a doctoral researcher at the University of Sussex in the School of Media, Film and Music. I am currently funded by the Arts and Humanities Research Council (AHRC).

Contact for further information
Tanya Kant – tk44@sussex.ac.uk

For more information on the project please visit:
http://www.sussex.ac.uk/mediaandfilm/people/list/person/174167

Or the research project blog: http://problematisingpersonalization.wordpress.com/

Thank you for taking the time to read this information sheet and for your interest in this study

3. Consent form and interview sheet Google Now research project

University of Sussex

CONSENT FORM FOR PROJECT PARTICIPANTS

Project Title: *The predictive promises of Google Now: How does Google Now map, interrupt and infer the lived experience of mobile users?*

Project Approval Reference: ER/TK44/1 (Project approved 17/07/13)
I agree to take part in the University of Sussex research project named above. I have had the project explained to me and I have read and understood the information sheet, which I may keep for my records. I confirm that I am 18 years old or over.

Part One: I understand that agreeing to take part in the project means that I am willing to:

To take part in research activities and data collection exercises (primarily undertaken in Week 7), to discuss my opinions of Google Now, and to talk about my opinions of online identity, privacy, personalization as well as my day-to-day movements.

To download or activate Google Now on my phone. I understand that by downloading or activating the app I agree to Google's Terms of Service. I also understand that Google Now may gain access to my search history, location history and any services that I use if I have Google account.

I also understand the following:

- I understand that any information I provide is confidential, and that no information that I disclose will lead to the identification of any individual in the reports on the project, either by the researcher or any other party.
- I understand that my participation is voluntary, that I can choose not to participate in the project, and that I can withdraw at any stage of the project prior to publication without being penalised or disadvantaged in any way.

I consent to the processing of my personal information for the purposes of this research study. I understand that such information will be treated as strictly confidential and handled in accordance with the Data Protection Act 1998.

Signature: _____

Name: _____

Date : 01/10/14 _____

_ _

Part Two: Participation in a series of focus groups
Please indicate whether you are interested in participating in a series of focus groups to further discuss your opinions of Google Now (taking place Wednesday afternoons, in Weeks 3, 4, 5 and 7). You will be entered into a prize draw to win one of two £50 vouchers for your participation in the focus groups.

☐ Yes, I am interested in participating in the focus groups

☐ No, I am not interested in participating in the focus groups

If you answered 'Yes', please leave your signature and email address below. Please note: focus groups will be recorded and you can pull out of participating in them at any time.

Email address: _____

Signature: _____

Research study

The predictive promises of Google Now: How does Google Now map, interrupt and infer the lived experience of mobile users?

Thank you very much for considering taking part in this study. Before deciding whether or not to participate, it is important to understand why this study is being conducted and what it will involve. Please take time to read the following information carefully.

What is the aim of the study?
The aim of the study is to explore how Google Now collects and predicts information about the individuals that use the app, and how that information might affect that lived experiences of individuals that engage with the app. The study also looks to explore how Google Now users feel about the app's predictive capabilities, as well as how the app might affect their identity, privacy and everyday movements.

What does participation in the study involve?
If you decide you would like to participate in this study, you will be asked to download or activate Google Now on your phone (if you haven't done so already), check Google Now on a weekly basis and take part in some data collection exercises during Week 7 of the module.

If you are interested in participating further in the research, you will be asked to take part in four group interviews (also known as focus groups) over the space of one month. The interviews will be semi-structured to allow you to express your feelings about the topics raised as fully as possible, and will probably take around an hour to complete. Interviews will be recorded but will be anonymous. You may also be asked to check Google Now on a daily basis, save a screen shot of any information that you find interesting and keep a short online diary of Google Now's predictions. After the interview, you will have the option to read the transcript of our conversations. Participants who take part all four focus groups will be entered into a prize draw to win one of two lots of £50 in vouchers. **If you are interested in taking part in the focus group, please sign part two of the consent form and leave your email address so I can send you more information.**

Taking part in this study is entirely optional. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time prior to publication and without giving a reason.

Why I have I been chosen to take part?
Because are over 18 years old, you are a student at Sussex University and you have a mobile phone that has the capability to run Google Now.

What are the possible disadvantages of participating?
If you participate in the focus groups, you will need to commit to attending four group interviews over the space of four weeks, you will be asked to keep screenshots and share them with the researcher. Please note: by using Google Now you are agreeing to Google's terms of service.

What are the possible advantages of participating?
All research activities are designed to be flexible and fun, to allow you to feel comfortable and to answer questions in a way that reflects how you feel about the topics – there are no right or wrong answers, it is your opinion that is valuable!

If you decided to take part in the focus groups, you will also be entered into a prize draw to win one of two lots of £50 gift vouchers of your choice.

The overall aim of the study is to explore how platform users feel about automated personalisation, personalised media and online identity, so your interview answers will contribute to important academic research into how platform users engaged with online personalisation in everyday contexts – an area of study that has so-far been little explored by Media and Cultural Studies.

Will my information in this study be kept confidential?
All identifying information gathered in this study will be kept strictly confidential. The finalised thesis will use a pseudonym of your first name, which can be self-selected or chosen on your behalf, in order to protect your identity. Your name and contact details will be stored separately to the transcripts of the interviews and your name will not be used in the transcriptions and subsequent writings.

How will the results of the study be used?
The results of the study will be used as part of my research for a doctoral thesis in Media and Cultural Studies.

Who is organising and funding the research?
I am conducting this research as a doctoral researcher at the University of Sussex in the School of Media, Film and Music. I am currently funded by the Arts and Humanities Research Council (AHRC).

Contact for further information
Tanya Kant – tk44@sussex.ac.uk

For more information on the project please visit:
http://www.sussex.ac.uk/mediaandfilm/people/list/person/174167
Or the research project blog: http://problematisingpersonalization.wordpress.com/

Thank you for taking the time to read this information sheet and for your interest in this study

C. Base Interview questions.

Note: all interviews conducted for this thesis were semi-structured. As such the following interview questions are base questions which formed the basis for project interviews, however questions were also interview-specific and so the following does not cover all questions asked and answered.

1. Interview questions for Ghostery interviews

Part one: Ghostery

1. Why did you decide to download Ghostery?

2. In your own words, how would you describe Ghostery?

3. How do you use Ghostery? To block trackers? Or to see who's tracker you on the web? Both?

4. What do you like about Ghostery?

5. What don't you like about Ghostery?

Part two: data tracking and privacy

6. How do you feel about the trackers (listed in the purple box at the upper right hand side of every wed page) that track you?

7. What do you know about the trackers that are tracking you?

8. Why do you think these trackers are tracking you? What do you think these trackers do with your information?

9. To what extent does tracking impact on your online privacy?

10. Do you think privacy matters when you surf the web? If so, why do you think privacy matters?

11. Many trackers say they help businesses make their services more relevant to their audiences, by personalising content. How do you feel about this claim?

12. Some of the data gathered through tracking is used to deliver you targeted advertising, based on things like your age, your location and your gender. How do you feel about targeted advertising?

Part three: Other tracker blockers

14. Do you use any other tracker blockers alongside Ghostery? If yes, which tracker blockers do you use?

15. This paper argues that using multiple tracker blockers can actually help trackers to identify your browser. How do you feel about this claim?

16. Do you think your efforts to protect your data trail have been successful? Do you think it is possibly to completely protect your data trail when you surf the web?

17. Do you have any other comments or questions regarding tracker blocking and online privacy that you'd like to add?

18. Ghostery is owned by Evidon, a commercial company that assists businesses in complying with online privacy regulations and monitoring the third parties that use their sites. How do you feel about the fact that Ghostery is owned and operated by Evidon?

2. Base interview questions for Facebook study

Part one: Facebook
1. Why did you decide to join Facebook?
2. Do you use Facebook often?

3. What do you do on Facebook?

4. What do you like about Facebook?

What don't you like about Facebook?

5. Do you think Facebook is a public or private space?

6. Do you think your Facebook profile, and Facebook use in general, reflects 'who you are'?

Part two: your Facebook connections
7. Can you name any of services or apps that are connected to your Facebook account (well-known services and apps include Spotify, Neflix, Candy Crush and Instagram)?

8. When did you notice that these services where connected to your Facebook account? How did you notice them?

9. Do you let these services post info to your Facebook on your behalf?

10. Have these services ever posted on your behalf without your knowledge?

11. Do these entertainment services ever try and personalise content on your behalf?

12. How do you feel about these services posting on your behalf?

13. Do you feel in control of this connection? If yes, why do you feel in control? If no, why do you not feel in control?

13. Do you think these posts affect how other see you?

14. Did you read the privacy policy or Terms of Service when you signed up to the entertainment services that connect to your Facebook?

15. Facebook claims that it's apps 'let you express who you are through all the things you do'. How do you feel about this claim?

16. Have you ever had to 'invite' people to use the app in order to get what you wanted out of the app?

Part three: Other people's connections

17. Have you ever noticed a friend's connection to an entertainment and their Facebook? If yes, what made you become aware of this connection?
18. What did you think when you saw the connection?
19. Did you comment on the post?
20. Did the post affect how you see your friend?
21. Any other questions or comments?

3. Base interview questions Google Now research project

Week one questions

Part one: Google Now motivations for use/ non-use

1. Who uses Google Now already? Why did you decide to activate it?
2. For those that don't use it – why did you not use it before this study?
3. If you've used it before – have you customised it in anyway? Did customising it make any difference to your experience?

Part two: Google Now – bring up Google and take a look at the cards

4. What cards has Google Now shown you?
5. How do you feel about these cards?
6. Are they helpful? Which ones are helpful and why?
7. What information has Google Now tried to predict about you? For example, has it tried to predict you work or home address?
8. What predictions has it got right?
9. What predictions has it got wrong?
10. How do you think Google has managed to find out this information?
11. How do you feel about Google using your location and search history?
12. Is there any information that you wouldn't want Google to access?

Week two questions:

1. What cards has GN shown you this week?
2. Who's taken screenshots? What are the screenshots of?
3. Why did you decide to take them?
4. How Google Now been useful to anyone this week? Have you checked it for any specific reason?
5. I want to have a think about your everyday movements. Without thinking about Google Now too much, take a minute to write down a run-down of what you did yesterday – can be detailed/ not detailed/ personal/ not personal as you like. Hand the piece of paper to me.
6. OK and now what you did on Saturday.
7. Go through and ask some details
8. Did you use Google Now for any of the things?

9. Could you have used Google for any of the things? What could you have used it for? Why didn't you use it?
10. Settings – what types of cards would you be interested in using? Football? Stocks? TV and Movies?
11. OK so does anyone have any hobbies? Follow any sports? What's you main interests? Music? Clubbing?

Week 3 questions:
What cards have you got this week?
Has anyone noticed any improvements in Google Now's predictions? Or has it got worse?
Google Now says it can give you the information that 'you need throughout your day' before you even ask? How do you feel about this claim?
4. Check the home/ workplace cards again – what's the same/ what's different

Specific questions
Currency converter for Tariq – can we change your home address and see if the currency convert
Rachel – have you managed to get Google Now to show you anything else that's interesting ?
Lisa – has it given you sports information on your football team?
Laura- has Google's predictions improved now that you can customise it ?

Data and identity
5. What do you think Google knows about you?
6. How do you think it gets that information?
7. Why do you think it wants that information?
8. Google uses the information to bring you personalised content. How do you feel about personalised content?
9. Do you think that Google Now is personalised to you?
10. Lots of sites – Facebook, YouTube, Netflix and Google Search – personalise content for you. How do you feel about personalised content?
11. Google Now doesn't have personalised ads but other sites do – how do you feel about personalised ads? How do you think personalised ads work?
12. Do you think the things you do online – surf the net, watch TV, etc – reflect the sort of person that you are?
13. We went through everyone's hobbies/ interest last week. Why do you think your interest// hobbies are not included in Google Now's categories?

Google Ad Settings
1. Explain Google Ads – ask Students to view/ sign in if needed
2. What settings have you got?
3. How do you feel about your settings?
4. Do you feel your settings reflect your gender, age and interests?
5. How do you feel about Google trying to predict your gender age and interests?

Week four questions:
1. Ultimately, how would you describe your experience of Google Now?
2. Will you continue to use Google Now?
3. Do you think Google Now has/ or could have any impact on your everyday experience?

4. What sort of person do you think Google Now is designed for? Is it designed for you?
5. Why do you think it's designed for you/ not you?
6. Would Google Now's predictions would be better if it knew more about you?
7. What sort of stuff would you like to see on Google Now?
   Media studies and personalisation
8. What do you think about the problems of personalisation that we explored in the lecture?
9. 20. Do you think the content of the course has affected how you think about online privacy and identity?
10. Are you surprised that the web is personalised to you?
11. Do you think that the web should be personalised to you?
12. Do you know what happens to the data that Google collects from you?
13. Do you have a good idea of what Google know about you? Do you think you know everything it knows, and what is does exactly?
14. Do you think you're well informed about what happens to your personal data online in general?
15. Do you think it's possible to know exactly what happens to your personal data and how it's used?
16. Do you feel that you want to protect your personal data in anyway?
17. Do you think governments having access to your online data? Do you mind that companies have access to your data?
18. Do you ever clear your search history?
19. Do you take any other steps to protect your online privacy?
20. Do any of you use add block, or track blocking software?
21. Do you think online privacy matters?
22. Have you learnt anything from your experience of Google Now?

Specific questions:
Laura – are you still finding Google Now helpful? Still improving?
Heena: still giving you suggestions for shows?
Rachel: Has Google showed you any info yet?